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DYNAMIC SOCIOLOGY

OR APPLIED SOCIAL SCIENCE

AS BASED UPON STATICAL SOCIOLOGY
AND THE LESS COMPLEX SCIENCES

BY

LESTER F. WARD

Τ. ἰσχύειν μωρίας ἀμαθία
SOPHOCLES

IN TWO VOLUMES
VOL. II

SECOND EDITION

NEW YORK
D. APPLETON AND COMPANY
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In the introductory chapter of this work the eminently practical character of the science of Dynamic Sociology was carefully set forth. The four chapters of the first volume preceding the last one, dealing as they did with the fundamental data upon which all true philosophy must rest, were necessarily somewhat abstruse, and bore only an indirect relation to the main purpose of the work. The closing chapter of that volume, though fairly entering upon the field of social science, was purposely confined to the statical and passively dynamical conditions, which it was necessary to comprehend thoroughly before the more important but less understood problems of active social dynamics, or applied social science, could be intelligibly stated and logically discussed (vol. i, p. 56).

And now the reader's indulgence is asked while still another preliminary chapter is presented, which also seems essential to a complete preparation for the intelligent comprehension of all the terms and postulates in the final argument.

Before we are fully prepared to consider, in all its length and breadth, the important proposition that society can and should seriously undertake the artificial improvement of its condition upon scientific principles strictly analogous to those by which the rude conditions of nature have been improved upon in the process which we call civilization; before we are wholly ready to enter upon an argument to prove the feasibility, the desirability, and the right of society, as such, to adopt an aggressive reform policy guided entirely by scientific foresight rendered possible by an intelligent acquaintance with the fundamental laws of human action; before we can justly contemplate man in his social corporate capacity assuming the attitude of a teleological agent and adopting measures in the nature of final causes for the production of remote beneficial effects—before we can properly rise to this position, it seems necessary that we should first seek to obtain as just and true a conception as the human mind is capable of grasping, of the real and precise relations which man and nature mutually sustain to each other.

This general complex problem naturally resolves itself into two more special and simple problems. These are:

First. What is the attitude which nature assumes toward man? and—

Second. What is the attitude which man should assume toward nature?

These are the fundamental questions, upon the answers to which all human conduct, other than that prompted by mere impulse, depends. They are therefore the questions which society must carefully consider and correctly answer before it can hope successfully to cope with the obstacles to its self-directed progress.

We will consider these questions in the order in which they have been stated.

First, then, what is the attitude of nature toward man?

Scattered throughout the preceding chapters of this work, the reader has doubtless found numerous hints at the general conclusions toward which the ever-widening facts of science have tended constantly to converge. A brief summary of the chief divisions of this general conclusion may be fitly introduced before entering into their more general consideration in connection with the erroneous views which have been held in opposition to them.

In the first place, nature stands to man in the relation of the whole to a part. Man is an integral part of the universe, and, in order to be correctly conceived and properly studied, he must be conceived and studied as an objective phenomenon presented by nature, "*Der Mensch ist selbst Erscheinung.*"* Neither the animal and vegetable forms, nor the rock formations, nor the chemical elements, are more to be regarded as natural objects for scientific study than are individual men or human societies. The laws governing the migrations of birds, or the geographical distribution of plants, or the movement of storms, or the elective affinities of chemicals, are not more the legitimate subjects of scientific investigation than are the individual or collective actions of men or the changes that take place in human opinions and public sentiment. From the scientific point of view, all phenomena are equally legitimate objects of study.

In the second place, nature presents the relation of progenitor of man. Man is not only a part of nature as a whole, but nature antedated him and has produced him. This, however, is true only in the sense that it is true of every other part of nature, every other object in the universe. Every animal, tree, rock, metal, or gas that is known is in precisely the same manner a product of nature. Time was when it had no existence as such an object, and, in the course of the eternity of changes which have been going on in matter, it has here and now assumed its present shape and character. Man is simply one of these many products. He, too, has been slowly evolved out of materials which have indeed always existed, but have but very recently assumed this form. The particular form, character, structure, and attributes which belong to the creature denominated man are such as they are in virtue of an inexorable *necessity* involved in the nature of things; they are the result of the interaction of coincident forces, the activities of molecular aggregates, possessing just such degrees and kinds of aggregation, and thrown into just such relations to one another as were adapted to the development of just such a being. The necessity of his existence is, therefore, just equal to the impossibility of his non-existence. Both are absolute. Nature, therefore, occupies the relation to man of cause to effect, of antecedent to consequent. But the process of causation is of the strictly mechanical kind. He is the product of an infinite series of infinitesimal impacts in one general direction. He has, as it were, been gradually pushed into existence by a storm of pelting atoms continued through millions of years. Forces, as thus defined—and this is the only rational theory of force (vol. i, p. 290)—have surrounded the elements out of which he was created on that spot, wherever it may have been, which was the true cradle of the race, and molded him into human shape after having first compelled him to assume for ages successively the shapes of a long line of ancestral animal types. The same forces have impelled him on through advancing grades of physical and mental development to his present condition. If he tended to swerve to the right or left, these forces sustained the wayward tendency by increase of power on the faltering side. Tendencies to abort, revert, or retrograde, were counteracted by persistent impulses, so that, in most parts of the great spreading tree which the human families present, the tendencies have been steadily, though slowly, forward in the scale of organization. But so, too, must we regard the small progress made by man, particularly by some of the ramifications, as due to counter, or opposing, forces, and the real progress achieved as representing only the resultant of all the classes of forces which have constantly affected his condition.

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* Kant, "Kritik der reinen Vernunft," S. 382.

In the third and last place, nature must be regarded as *unconscious.* Throughout all the changes which have resulted in the evolution of man, the process has been purely automatic. No thought, no ideas, no plan, no purpose has entered into the great cosmic movement. As the winds blindly obey the physical laws of the earth's especial character, due to its motions, its proximity to the sun, its orbital inclination, and its methodless land and water distribution; as the clouds gather, break, and pour their contents back upon the earth, and then vanish or go flying across the sky, impelled by wild, senseless, and reckless forces; as the cataract plunges and the volcano belches in obedience to stern physical impulses to which no one thinks, except metaphorically, of attributing motive or intelligence—so all the great secular processes of nature, including the development of organic forms and of man, have been impelled by blind and mindless energies guided by no intelligence or conscious power either from within or from without. The inherent motions of the ultimate atoms of primordial matter, as eternal, uncreatable, and indestructible as those atoms themselves, must be regarded as the all-sufficient cause of all the results we see, however complex and wonderful we may consider those results to be. But really there is no occasion for wonder. The first step in primordial aggregation (vol. i, p. 232) is the only fact that need draw upon our imagination. Granted that material units tend to cohere into units of higher orders—a fact of common observation in all the established sciences—and the evolution of a man is no more remarkable than the evolution of a metal or a crystal. In the history of the universe there are no time-limits. A process once set up in a given direction may reach all the degrees that can be embraced in a finite series: it may be overslaughed at its inception by counter-tendencies, it may continue for an unlimited period at a uniform rate, or it may go on increasing in an arithmetical or a geometrical progression for a vast but finite period and eventually equilibrate itself. The fundamental principles of Evolution as formulated by Spencer require that all processes shall in fact reach a limit and be followed by a reversal of the activities which they have manifested. But to finite beings this great cycle, or the ascending series of any cosmical process, may as easily be so prolonged in time as to be practically infinite in duration as to be reduced to the mere span which can be watched by the human eye. The process which has evolved the solar system, or the sidereal system of which it forms a part, has lasted no longer, relatively to absolute eternity of time, than has that which measures the birth, lifetime, and death of an infusorium as it takes place under the continuous gaze of the microscopist. Neither, if measured by this standard, is the degree of organization of a Newton greater than that of a vibrio. There are some who smile at the mention of such sweeping comparisons; but the human mind must learn to accustom itself to contemplate nature in its true relations and magnitude, and the human race can never rise to a just conception of nature or of the reciprocal relations of man and nature until the notion of infinitude, both in time and space as well as in power, has been definitely formed. It is narrow, finite, anthropomorphic conceptions of the universe which have dwarfed the labors of otherwise great minds and kept back the truths which the world now chiefly values, and it is due to the enlargement of men's views respecting the vastness of nature's periods and spaces that all true progress in our acquaintance with the universe has been achieved.

The two categories of time and space have been at last acknowledged as admitting unlimited series of relations of succession and co-existence;* but the category of causation is as yet restricted to finite series of phenomena. This, too, must be enlarged and the truth recognized that forces have been at work from all eternity, and that processes of vast duration have been required to produce the effects which we behold around us. A series of changes in the direction of organization may as easily be conceived to extend through millions of centuries as through a few thousand years, and such a conception clears away at once that thaumaturgic character which such phenomena usually present. *Nil admirari.* Amazement at the lofty reaches of natural processes belongs to the infantile stage of the human mind. The enlightened intellect may contemplate with a serene satisfaction of the highest order the relatively vast operations and achievements of physical law, and this is the final and purified form of what is called the religious sentiment in man; but to lose one's self in wonder and awe is only to confess ignorance and refuse instruction.†

Neither is there more need to assume an external conscious and intelligent guiding power in biology and anthropology than Laplace‡ found in astronomy.? The directive law is that of adaptation.? It is surprising to see how difficult it seems to be for the human mind to grasp this conception in its entirety.! When Du Bois-Reymond defends the explanation of Galiani, who illustrated the apparent harmony in nature by the example of the loaded dice, he evinces a total inability to comprehend the fundamental notion of natural adaptation. What better is the theory of the loaded dice than the doctrine of external teleological design? How came the dice loaded? Who loaded them? If not a personal deity existing outside of nature and antedating it, then what other agent can be named? Clearly this is no new explanation, but only the old one with a somewhat novel illustration. How, then, is the harmony we see to be accounted for? We shall presently see reason to believe that the degree of adaptation in the world is far less than is popularly supposed, but it nevertheless exists in an obvious way. Yet it is effectually accounted for by the not at all circular proposition that things *are* adapted because they *have adapted themselves*. What we see exists of necessity. It might have been other than it is, had the conditions been other than they were. The conditions being what they were, the results could be no other than they are. A certain degree of adaptation is necessary to the existence of a form; therefore, for forms to exist at all, they must be to a certain extent adapted. If those forms that now exist had not existed, others would have existed. These, like the present ones, would also have been adapted. They would have stood the same chance to be higher as to be lower forms. We have as much reason to wonder that we do not see higher forms as that we see forms as high as those actually existing. Were men not sufficiently adapted to their surroundings, they would not exist to contemplate the want of adaptation. If animals and plants were not similarly adapted, they would likewise be wanting. Therefore, instead of wondering at the degree of adaptation displayed, the only true object of wonder would be the existence of wholly *un*adapted forms. But these are never seen, because they can not exist. In nature there are none but loaded dice. This is no chance world. It is a world of law, of mechanical causation, of necessity. The example of the dice is a poor one. In only one sense can it be made to apply. If we assume the number of dice thrown to be unlimited, only a small percentage of which are loaded, and all that are not thus loaded to be lost, a crude conception of nature's process may be formed. But there is no distinction between the dice and the players. One set of dice is the causal antecedent of a new set, from which, as from the parent set, only the loaded ones are selected and the rest lost. But, still, the analogy is forced and awkward.

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* "In the economy of the world I can find no traces of a beginning, no prospect of an end."—HUTTON.

† Auguste Comte, "Philosophie Positive," vol. iii, p. 321.

‡ It is related that, when asked how he could have written so great a work as the "Mécanique Céleste" on the subject of the system of the universe without once mentioning its Author, he replied: "Je n'avais pas besoin de cette hypothèse-là." (M. Edm. Perrier quotes Laplace as follows: "Dieu est une hypothèse dont la science n'a que faire."—"Revue Scientifique," 22 mars, 1879, p. 891.)

As will be more fully shown toward the close of this chapter (*infra*, p. 81), nature's processes are not teleologic but genetic. The cause not only always precedes the effect, but it immediately precedes it. The effect is in immediate proximity to the cause. The changes take place by differentials, and all advance is through differentiation. Differentiation is distinguished from variation in that the changes are necessarily produced by means of differences too minute to be severally taken account of. It is a molecular process. The motion of one molecule is directly imparted to others. The single effect is imperceptible; but multiplication and repetition, number and time, accomplish the results observed. An initial motion inhering in the primary form of matter[*] is therefore the sole source of all causation and the true "first cause."

The wholly unconscious and unintelligent character of nature's processes may be safely concluded from their genetic stamp. Intelligence works quite otherwise. The inseparable characteristic of conscious action is that it is teleological. Cause and effect are remote from each other. Means are adapted to distant ends. The chain of causal impulses connecting antecedents with consequents is not direct. The advantages are proportioned to the interval. The more remote the effect from the cause, the greater may the disproportion be made between the cause and the effect. Such causes are called "final causes," and the same amount of energy expended in them may be made to multiply the effect to almost any required degree. Nature never employs the "final cause" but only the "efficient cause." But the tendency to organization which has existed on this planet for a vast period, in connection with the increasing adaptation of the conditions now found upon its surface from the time when it assumed a cooled exterior to the present time, has gradually evolved a class of forms called animals, in which the remarkable quality denominated consciousness (vol. i, pp. 366, 376) is manifested. This quality exhibits all conceivable degrees, from that seen in the monad to that found in enlightened man, and throughout this series the capacity for teleological action has steadily and uniformly kept pace with the degree of intelligence. We are therefore forced to conclude that consciousness and intelligence are products of organization; that organized beings are, as it were, devices for the concentration and intensification of molecular activities (vol. i, pp. 324, 354); and that mind and thought are among the necessary products of such concentrated and intensified activities—the properties of matter thus organized. The "soul of truth," therefore, in the belief that the universe possesses consciousness, intelligence, and mind, consists in the fact that the primary activities of diffused matter—activities which are never divorced from it—constitute the sole element out of which, by simple focalization, these qualities are produced. But the thought must be dismissed and wholly abandoned that in their diffused unorganized state these activities actually constitute intelligence. As well proceed upon the assumption that "grass" is really "flesh," because it is known to be convertible into it by a given process. The essential condition is that process, and without it there is no result. Mind is found only at the end of the series, and not at the beginning. It is the distinctive attribute of the creature, and not of the creator. It resides in man, and not in nature. Unless this truth is recognized, the true attitude of nature toward man can never be correctly understood.

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[*] This explanation of the universe, although substantially that of Epicurus, Democritus, and Lucretius, has thus far failed to receive an appropriate name. That of the "atomic theory," never adequate to the full conception, has now been transferred to the chemical law of proportions. The idea of matter in motion, which embraces the totality of the conception, would be well expressed by the word *hylokinesis* (ὑλοκίνησις), and this mode of viewing phenomena could then be referred to as the *hylokinetic* theory. (See vol. i, p. 221.)

We may now, with equal brevity, consider the second division of the general problem of the mutual relations of man and nature, viz.:

What is the attitude which man should assume toward nature?

Without specializing in this place, it will suffice to say that this attitude should be of a twofold character: first, that of a student; and, second, that of a master.

Man finds himself an integral part of this great unconscious creative whole called nature, only a minute fraction of which can by any possible means be brought within the range of his experience. Although it consists chiefly of large masses, yet in fact these masses are composed of molecules so minute that no magnifying power can probably ever render the largest of them visible. It is this fact chiefly which gives rise to so many fundamental errors in primitive human judgments. One of the most powerful agents on the earth's surface, and at the same time one of the most important and interesting objects with which men have always and every-where been compelled to come in contact, is an invisible gas, the earth's atmosphere (vol. i, p. 48), whose existence as a real substance was scarcely suspected until chemistry had become a science. It is easy to imagine what a fruitful source of error such an object must be to an ignorant world. But this is only a single example. Others less apparent, but productive of far more injurious illusions, surrounded the primitive man on every hand. A few of the great delusions under which the race has labored, and still labors, were pointed out in the INTRODUCTION (vol. i, pp. 45–52). The evils entailed by this necessary ignorance of his surroundings are incalculable. Indeed, the greater part of all suffering is the result, direct or remote, of such ignorance. Obviously, therefore, the first great duty of man is to acquaint himself with his environment. This can only be done by study. The phenomena that lie on the surface are of little value. They mislead at every turn. Not only must the deep-lying facts, difficult of access, be sought out with great labor and perseverance, but they must be co-ordinated into laws capable of affording safe and reliable guides to human operations. To do this requires a vast amount of patient study. Only a little has yet been revealed of the more important truths of nature, yet consider the amount of research which it has required! Nevertheless, only a few individuals have contributed any thing at all to the result. It is as yet only the simpler and more obvious relations between man and nature that have been determined. In the domain of physical forces and chemical substances he is able to exercise prevision in many ways to secure advantages and avert evils, but in most of the higher fields of vital, mental, moral, and social phenomena, these relations are either utterly ignored or but dimly suspected, so that his knowledge of them avails him nothing. The great work before him, therefore, still is study.

In his pursuit of information with regard to the nature of the universe and his position in it, he must be deterred by no fears. If he can evade the action of natural laws, he has no other source of apprehension. Nature has neither feeling nor will, neither consciousness nor intelligence. He can lay open her bowels and study her most delicate tissues with entire impunity. Except as the great creative mother of all things, she is absolutely passive toward all sentient beings. Man's right to probe and penetrate the deepest secrets of the universe is absolute and unchallenged. It is only he himself who has ever ventured to question it. His active brain, filled with a thousand other delusions and imaginings, has fancied gods and demons outside of nature forbidding him to prosecute his studies. But none of these have ever presented themselves except in imagination to the student of nature, demanding that he desist. Errors of this kind, however, coupled with a general aversion to the laborious methods of such study, and a total misconception of what constitutes true knowledge, have prevented the race from making the degree of progress in determining its relations to the universe which its brain-development and its mental activities prove that it might have made under a wiser directive influence. Even Lord Bacon,[*] in a modified way, reflects the ancient superstition of man's subserviency to Nature. He should indeed be the interpreter ("*interpres*"), but in no proper sense the servant ("*minister*"), of Nature, and the only way in which we can correctly interpret his frequent remark that Nature can only be conquered by obeying her,[†] is to make this obedience equivalent to an acquaintance with and recognition of her laws. He has been the servant of Nature too long. All true progress has been measured by his growing mastery over her, which has in turn been strictly proportional to his knowledge of her truths.

This is why, in the second place, man should assume toward Nature the attitude of a master, or ruler. By this is of course meant an effort to exercise over all natural forces and phenomena a degree of direction and control sufficient to protect himself from injury, and procure for himself all the benefits which they are capable of rendering. These forces and phenomena are neither good nor bad. No moral quality resides in them. Good and bad can only be predicated of an intelligent agent, and, as we have seen, Nature is not such an agent. But, in the uncontrolled operation of natural laws, beings capable of feeling are liable to injury. In an ever-changing environment, that degree of correspondence can never be reached in which no friction can occur. It is this perpetual conflict of every species with its adverse surroundings, this grinding at the outer boundaries of its sphere of activity, which constantly keeps its numbers down to moderate limits and its members restricted to definite geographical areas. When we compute the power of multiplication of any species, even the least prolific, and compare this with the actual number capable of surviving and really extant, we are helped to realize the potency of this influence as perpetually exerted by an adverse environment. The degree of adaptation is not so perfect but that for every one that survives from ten to ten million are destroyed. In man this ratio is less than in any other animal, and it is this which has enabled him, to so much greater an extent than any other animal, to increase his numbers and expand his territorial limits. This has been due to his superior sagacity and cunning, to his intelligence, which in turn has given rise to society, to government, and to other protective institutions. Altruistic morality in its incipient form arises as soon as intelligence begins to counteract the natural influences which restrict population. One of the secrets of the success of the human race in peopling the entire globe has been this moral sense which protects others where natural laws would destroy them. Government, which has this extra-natural protection for its object, had its rise in this altruistic sentiment, though in a very undeveloped form of it—a sort of egoistic altruism, protecting others for the benefit of self. But even this first and perhaps greatest step taken by the race must be attributed to an increased acquaintance with its relations to the world around it. This knowledge was of an empirical kind, but it served its purpose. All the truly sociological progress thus far made has been based on empirical knowledge. It has sufficed to place man where we find him, which is a truly grand result. It must, however, teach us the important lesson that nature is really easily controlled. A very little acquaintance with natural laws is sufficient to enable us to achieve stupendous effects. But the future of the human race must not be too confidently inferred from the past. The difficulties increase at a much greater rate than the density of population. The complexity of civilization augments at a rate altogether out of proportion to the advance of intelligence. Moreover, in the present state of enlightened societies, the progress being made by the *élite* of the world in scientific discovery and mechanical application is far beyond the possible power of the masses, under existing methods of instruction, to comprehend it. This tends rapidly to increase the disproportion and confusion in society, and threatens to precipitate the grand crisis which wise men can not but foresee approaching unless a radical change is soon inaugurated in the social constitution of the civilized world. Science must supplant empiricism, and fundamental knowledge be universally diffused.

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[*] "Novum Organum," lib. i, aph. i.

[†] "Neque natura aliter quam parendo vincitur." "Dist. Op." "Works," vol. i, p. 227; also, "Nov. Org.," lib. i, aph. iii. Cf. aph. cxxix ("Works," p. 337).

The principal object which man has in the study of nature is to enable him to control its forces. To only a few minds is the satisfaction derived from the mere acquisition and consciousness of knowledge an adequate incentive. Doubtless, this satisfaction has played a large part in the labors of the few who have made the scanty contributions thus far obtained, and in the individual worker it must ever constitute a supreme motive, while a possible future is conceivable, in which this, the highest source of happiness, will also be a universal and popular one, taking rank alongside of those coarser gratifications whose authority is now supreme, because it is through them that the race is preserved and perpetuated (vol. i, pp. 471, 472, 697). But, for the present and the immediate future, it must be assumed that the primary end of knowledge is to secure practical advantage. The degree of correspondence between man and his environment, notwithstanding his sagacity and intelligence, his artful devices and protective institutions, is not so great but that a large amount of friction constantly exists. This friction not only decimates his ranks and brings the majority of mankind to premature death after the manner of the fishes and the hares, but, what should really be regarded as worse (since the rapid multiplication of individuals could not long continue and would not be economically desirable), it involves a vast amount of physical and mental suffering, and prevents that state of universal well-being which should be the highest aim of life.

If empirical knowledge has sufficed to reduce the friction of an adverse environment to the extent which separates the condition of man so widely from that of other creatures devoid of this knowledge, it is certainly logical to argue that higher degrees of knowledge will continue proportionally to widen this contrast. If it were true that perfection in the correspondence had already been attained, this reasoning would of course be fallacious. But we have seen that such is far from the case. The amount of suffering in the human family simply proves lack of correspondence. Men are still continually dashing blindly against the barriers which the environment presents to their free activities. Empirical knowledge has afforded them a superficial view of the world and their relations to it; but below lie hidden truths, whose meager manifestations at the surface are almost always wrongly interpreted, and from which conclusions precisely the reverse of the truth are frequently drawn. Actions based on these conclusions lead men into innumerable pitfalls, and entail anguish and suffering where immediate destruction is escaped. The various ways in which ignorance of these truths affect the race tend constantly to lessen the sum of possible enjoyment and to lower the tone of human life.

The success achieved by man in increasing his numbers and in widening his geographical range has been the result of a certain degree of direct control which his increased intelligence has enabled him to exercise over the forces of nature constituting his environment. Whatever further progress he may ever make in the direction of increasing his liberties, mitigating his evils, and augmenting his capacity for happiness, must result from his success in obtaining still more complete mastery over the adverse elements of his natural surroundings. A simple mechanical device is often sufficient to convert a highly injurious element into a remarkably beneficial one, and, by here repressing a harmful influence and there creating a useful one, increasingly high degrees of correspondence may be attained, and more and more perfect conditions of existence brought about.

In the control of nature as in its study, there are no arbitrary limitations. The right is always co-extensive with the power, and only a false, unnatural view of the case can erect any other barrier to man's invasion of nature's domain.

Such are some of the most general relations subsisting between man and nature, without a clear conception of which no basis can exist for the science of Dynamic Sociology.

From these general considerations we may now pass to others of a more special character.

Lamarck seems to have been the first clearly to recognize and systematically to formulate the laws of the interdependence and mutual relations of living organisms and their surrounding influences. The latter factor he characterizes in various ways and denotes by several appropriate terms. Geoffroy Saint-Hilaire had used the expression *monde ambiant*, to which Lamarck adds that of *milieu*,* giving it a wide sense, and often qualifies it as the *milieu environnant*,† thus anticipating both Comte's "*milieu*" ‡ and Herbert Spencer's admirable English equivalent "environment." But, upon the whole, Lamarck employed most frequently, as most completely conveying his idea in the greatest number of cases, the simple word *circonstances*, and the title of his famous Chapter VII of the "Philosophie Zoologique" is as follows: "De l'influence des circonstances sur les actions et

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* "Philosophie Zoologique," vol. i, p. 154.

† *Loc. cit.*, vol. ii, pp. 5, 304.

‡ "Philosophie Positive," vol. iii, p. 201.

les habitudes des animaux et de celle des actions et des habitudes de ces corps vivants, comme causes qui modifient leur organisation et leurs parties."

Perhaps no better word could be chosen to express the whole idea of the various mutual actions and reactions taking place between the universe and the human race—the macrocosm and the microcosm—each at times both active and passive, than this same plain word of common parlance, *circumstances.*

All philosophy aims to account for phenomena. The human mind is so constituted that no power can prevent it from perpetually striving toward this end. All systems of thought naturally fall, in this respect, under two general divisions, the *teleological* and the *genetic.* The only system that ever claimed to disavow both these bases is that of Comte, which in this respect must be regarded rather as a revolt against philosophy than as a system of philosophy. Under both these general divisions there have grown up numerous more special doctrines, which have each in its turn formed nuclei for minor systems, to which, according to the special mental proclivities of each individual, men have given in their adhesion. To the teleological division properly belong the doctrines of pure theology, or divine free-will, of predestination, and of fatalism. To this also should be added that modern dualistic school who hold that all phenomena are the result of unvarying laws once arbitrarily impressed upon the universe. This school, however, except in so far as the primal origin of these laws is concerned, may consistently be classed in the genetic division.

This last-named general class does not possess the number or variety of special sects found in the other, and in all their essential tenets its adherents may be regarded as practically at one. Though apparently of modern origin, the genetic school is in reality as old as the fully developed mind of man. There have always existed the two antithetical ways of looking at the world, and no age has been wholly without adherents to both of these schools. But there are reasons in the nature of things why the teleological habit of thought should, down to within a quite recent period, have maintained an overwhelming supremacy over the genetic habit of thought. The only philosopher who seems to have clearly perceived the true nature of this fundamental antithesis and attempted a systematic analysis of the principles upon which it rests, is Immanuel Kant. In his celebrated "Antinomies"* and the profound discussion which follows them, he has laid the foundation in psychology, where it properly belongs, for a thorough understanding of this most vital and practically important condition of human thought. His "theses" and "antitheses" differ only in the character of the examples given from the primary postulates of the modern teleologists and genetists, respectively, and his choice of terms by which to characterize the defenders of these propositions, while they are not those which either party would now select, are perhaps as little objectionable to the one as to the other of these parties.

He calls the one the *dogmatic* and the other the *empirical* view of the world, but in his time and country the former of these terms had not acquired the stigma which has since been gradually fastened upon it, and meant a very different thing from that which Douglas Jerrold defined as "puppyism full grown"; while, as to the latter, the practice of opposing empiricism to quantitative scientific determination has also principally grown up since his day. Still, as if somewhat unsatisfied with this word, he sometimes employs a substitute for it, and calls this mode of thought the *critical* or the *skeptical* method.

In using the term *dogmatic* as applicable to the teleological school, Kant doubtless had in view the fact, so apparent to all, that it was this school that assumed to teach philosophy, being greatly in the ascendency; and, in the words *empirical*, *critical*, and *skeptical*, he no doubt recognized the tendency of a few minds at all times to revolt against the prevailing conceptions, examine their assumed principles, and subject them to mechanical and numerical tests, and to logical criticisms from rational grounds. For he declares that, in favor of accepting the former, or dogmatic, view of things, there exist three principal arguments: 1, that derived from a *practical interest*, since upon it appear to rest the claims of religion and morality; 2, that derived from a *speculative interest*, since by its aid the entire field of speculation can be compassed by the mind, and the conditioned directly derived from the unconditioned; and, 3, that derived from *popularity*, since he conceived that the great majority would always be found on that side.

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* "Kritik der reinen Vernunft," S. 304.

It is interesting and remarkable that so great a mind should be able to find no higher motives than these upon which to base the claims of dogmatism, which meant and still means the acceptance of the main body of beliefs of the age. The first is of so low an order that it would seem to be beneath the dignity of a philosopher to entertain it. For what has man's practical interest to do with philosophy, with the attainment of truth in the domain of abstract thought? The argument employed by Bishop Butler—that a particular religion should be embraced, on the sole ground, if on no other, that there could be nothing to lose and might be much to gain by so doing, while, in the failure to do so, there was nothing to gain and might be much to lose *—has been generally condemned as of a low order, in appealing to practical interest where a question of abstract truth was involved. But Bishop Butler was avowedly a sectarian writer, defending his particular religion, and such low appeals were to be expected. How, then, could Kant justify an analogous argument? As a disinterested philosopher, this would seem impossible. Yet Kant's justification, from his own peculiar point of view, though somewhat amusing, will appear to be quite satisfactory. It is this: Neither the thesis nor the antithesis of any of his antinomies is capable of proof, or, rather, both are capable of formal demonstration; and, being contradictories, all argument becomes absurd. With him the universe is a great dilemma, of which any one may take either horn with exactly equal chances of reaching the truth. He had better, therefore, of course, choose the one which is most to his interest, and this, Kant thought, was unquestionably the dogmatic.

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* "Analogy of Religion," p. 294.

Precisely the same might be said of his third reason for choosing that side, viz., the advantage to be derived from its greater popularity. If possible, this claim possesses a still lower moral weight than that of practical interest, of which it is, indeed, merely a temporal form. Only politicians now urge it as a means to influencing men's opinions. It certainly could never be decently put forward except in just such a case as Kant conceived this to be—a case in which it would otherwise be absolutely immaterial which side one took. The truth itself was hopelessly unattainable, and, if any ulterior consequences were, as a matter of fact, to follow either decision, one was as likely to escape them by the one course as by the other. The only guide left, therefore, was simply present advantage; and, be that the least greater on the one than on the other side, this would be sufficient to determine the decision.

Kant's second ground for accepting the thesis rather than the antithesis, viz., that of a speculative interest, being highly philosophical, deserves more attention. And, logically enough, we find him enumerating, among the advantages which the mind is to derive from choosing the dogmatic side of these antinomies, that of *convenience*, or *ease* (*Gemächlichkeit*), and also that of *respectability*. Nothing is truer than that teleology is a relief to the overstrained intellect striving to build a universe between two infinities. It is the philosophy of the indolent brain, the *ignava ratio*, and is thus adapted both to the childhood of the world and to all those who weary of intellectual effort. These may be good reasons where all hope of arriving at objective truth is renounced; they could scarcely be admitted under any other circumstances. That there is any greater intrinsic dignity or nobility in a universe created by design than in one created by evolution, few men with scientific habits of thought will probably be able to admit. These qualities are not objective but subjective. They do not belong to the world, but to those who contemplate it, and thus so much of the supposed speculative interest is relegated to the class of practical interest.

The empiricist of Kant loses all these advantages. In embracing the *antitheses*, he removes the foundations of religion and of morality, the latter conceived as deriving all its sanction from authority. "If there is no primordial Being (*Urwesen*) distinct from the universe, if the universe is without a beginning and therefore without a creator, our will not free, and the soul of the same divisibility and perishability as matter, moral ideas and principles lose all validity, and fall with the transcendental ideas which formed their theoretical support." In this passage he evidently fails to distinguish the fine shades, on the strength of which many modern scientists so stoutly reject the charge of materialism;* yet he has clearly in view the stern mechanical con-

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* To those who would disdain material things as unworthy, it has been well replied that "we know no more essentially what matter is than what mind is" (Dr. Henry Maudsley, "Fortnightly Review," August, 1879, p. 249). It may be added that, so far as the mind, or soul, is concerned, there are two widely different classes of materialists, whose views are perhaps more completely distinct than those of either are from those of avowed spiritualists. The one class regard the soul, or mind, as a material substance, differing from other material things only as these differ from one another. Or, if they deny that this spiritual entity is just the kind of matter of which the visible objects around us are composed, they still maintain its materiality as constituting it a substance independent of other substances—a real thing.

The other class, who have also been called materialists, do not regard the mind, or spirit, as in itself any thing at all. They maintain that it is simply a property of a certain specialized kind of matter, a mode of manifestation possessed by that organized substance called brain, or nerve-substance. Nothing nection between phenomena which constitutes the basis of the causational philosophy of science.

Empiricism, thus defined, is not, however, entirely without its advantages. It, too, possesses a certain speculative interest, in defining which Kant still more clearly shows that he was contemplating that same universal antithesis in the human mind which concerns us here. "Empiricism," says he, "affords advantages to the speculative interest of the reason, which are very fascinating, and far exceed those which the dogmatic teacher of rational ideas can promise. In the former, the intellect is always on its own peculiar ground, viz., the field of mere possible experiences, whose laws it can trace back, and by means of which it can expand its own certain and comprehensible knowledge without end. . . . The empiricist will never allow any epoch of nature to be assumed as the absolutely first, or any limit of his outlook into the surrounding world to be regarded as the outermost, or any of the objects of nature which he can resolve by mathematics or by observation and bring synthetically under his contemplation (*Anschauung*)—the extended—to pass over to those which neither sense nor imagination can ever represent *in concreto*—the simple." Surely his "empiricist" is here none other than a modern genetist, evolutionist, or scientist.

Even admitting all that Kant maintains for and against the two opposing views, it may still be a question whether the manly independence necessary to the empiricist would not be preferable to the idle respectability characteristic of the dogmatist.

Still better to illustrate the two antagonistic phases of thought, Kant asserts that they embody the contrast between Platonism and Epicureanism. Whether the teleologists can

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could be more *immaterial* than this conception of mind, while in purity and delicacy it certainly occupies a much higher rank than either the idea of actual materiality, already described, or that of spirituality, whatever that may mean, which also attributes to it identity and independence.

fairly regard Plato as the founder, or first great representative, of their views in philosophy, may, it is true, be open to some question, but that Epicurus foreshadowed, as faithfully as could be expected from the state of knowledge in his time, the teachings of modern science and the principles of the evolutionary, causational, or genetic school, can not be candidly denied. And, if his sect did nothing else, they clearly proved that this apparent question of opinion really has a psychological basis, and exists deep in the constitution of the human mind, more or less independently of the state of knowledge in the world. There always have existed a few minds unwilling to accept the dogmatism of the mass. There always crops out in society a more or less pronounced manifestation of rationalism as opposed to authority. While this class of views finds few open advocates, it always finds many tacit adherents, and, when uttered, a large but usually irresponsible following. Criticism of received beliefs is always sweet to a considerable number who rejoice at the overthrow of the leaders of opinion or the fall of paragons of morality. And this it is which often renders the peace of society insecure. The established code of morals is dimly felt by the lower classes to be, in some respects, radically unsound. The broad contrast between men's nominal beliefs, as spoken, and their real beliefs, as acted, is apparent even to children. The standard of conduct is so much higher than that which the controllers of conduct can themselves live up to, resulting always in the punishment of the weak and the poor for the same transgressions as are daily committed with impunity by the rich and influential, that the lowest miscreant feels that there is some fundamental wrong underlying the entire social fabric, although he can not tell what it is. All this must be regarded as the legitimate consequence of the undue supremacy of dogmatic ideas and teleological conceptions in society. So far from favoring morality, they are the direct cause of the most dangerous form of immorality, viz., a mutinous revolt against too severe and unnatural moral restraints. Rules of conduct based on these conceptions are necessarily arbitrary, while the normal intellect naturally asks a reason for its obedience.

But the worst criticism which Kant's doctrines admit is that directed against his antinomies themselves. It is *not* true that both sides of this question admit of equal proofs and disproofs. Disregarding Kant's logical demonstrations as worthless at his own showing, since they reduce the argument on either side to an absurdity, and appealing to the inductive method, which, without claiming infallibility, has wrought such mighty results for man, we may with safety maintain that the side of these questions which Kant calls the empirical has gained upon that which he calls the dogmatic in about the same proportion as the knowledge of the nature of things has increased in the world. The spirit of opposition to teleology could make no headway so long as so little was known of natural processes. Lucretius might write "De Rerum Natura," but what he could say that was true must go unsupported by facts and be discredited, while much that he must say that was false would be disproved and throw still greater discredit upon his system. In such a state of profound ignorance of the universe, teleological explanations were the only ones that the world would accept. They could be understood; genetic explanations could not. Appearances were all on one side. The deeper truths could not be seen nor realized.

The greatest paradox which nature presents is that of *adaptation*. The word itself contains an ambiguity. It has both an active and a middle, or reflective, sense. The former is teleological, the latter genetic. Adaptation, in a purely passive sense, is admitted by all. No one denies that there exists a great amount of correspondence between apparently very distinct objects. It is evident that they have, in some way, been made to correspond. The vital question is, How, and by what power, have they been so made? The teleologist says, By a power from without—by design. The causationist says, By a power from within—by adaptation.* Just here is the grand schism.

It is easy to see, too, why the teleologists should at first acquire, and for a long period maintain, a supremacy. The teleological answer to any question requires comparatively little intellectual effort. It is the easiest way of explaining things, the first explanation that suggests itself. Not only is it intrinsically more simple, but it is more in accord with human experience and the natural habit of thought. In other words, it is anthropomorphic. The mind will spontaneously explain natural phenomena in the same way that artificial phenomena are explained. A garment is adapted to the body that is to wear it. A duck's foot is adapted to the element it lives most in. The explanation of the first of these facts is known; that of the second is unknown. Why not infer it from that of the first? There exists no other *known* explanation. To sit down and evolve one of an entirely different kind is not only a laborious task, but, when announced, remains unproved until a large amount of scientific investigation shall have established a broad basis of induction. The skeptic, therefore, who in the infancy of human thought had the temerity to suggest that things worked out their observed relations of correspondence through the activities residing within them, was met, naturally enough, with derision. Yet every step that science has taken has been in the direction of disproving the popular and confirming the unpopular view. It has been gradually but steadily vindicating reason as against analogy, and establishing a causal as against an arbitrary connection between related facts.

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* As showing how nearly all facts admit of both a teleological and a genetic explanation, and puzzle the world, witness those which hasten maturity and fecundity. When a plant is bruised near the root, or deprived of fertile earth or moisture, it blooms prematurely, and hastens to perfect its fruit. The teleologist says it is warned that it must soon die, and enjoined not to fail to leave a posterity; hence its haste. The evolutionist says that the secondary function, reproduction, is accelerated, because not so strongly antagonized by the primary function, nutrition. In either case, the optimist may claim a special adaptation. The genetist shows that the result is a necessary consequence of the given conditions.

From this point of view we may now consider Kant's own formulated antinomies. The first thesis is:

"The universe has a beginning in time, and is also inclosed within limits in space"; the antithesis of which is: "The universe has no beginning and no limits in space, but is eternal in time and infinite in space." Has science any thing to say on this question, and, if so, which side does it espouse? Undoubtedly science has to do with it, and it also clearly takes sides upon it. Quantitative chemistry, scarcely born in Kant's time, has practically demonstrated the infinite duration of the universe in establishing the indestructibility of matter. Astronomy, to which Kant's own immortal "Theorie des Himmels" helped to give its rational impetus, has now so expanded the conception of space that it has become habitual to regard the universe as absolutely without limits. If any one doubts this, let him make an effort to go back to the old dogmatic conception, and figure to his mind a beginning or end to its duration, or boundaries to its extent. He will find this impossible, and this impossibility is wholly due to the increased knowledge of the universe which science has given to the world. It was once possible, it is still possible to the ignorant, to set bounds to time and space, but inductive science has swept away such crude scaffoldings, and opened up to the human mind, as it were, a view of the infinite.

It is no longer a transcendental question. It is a scientific one, to be solved, like all other scientific questions, by the accumulation of facts. Nothing in concrete science is demonstrated *a priori*. The practical truths of the universe are established *a posteriori*—by massing the evidence. In many of the questions now regarded as settled, the evidence has long been conflicting, and in some much still remains to be established; but, notwithstanding such residual facts, the preponderance of evidence on one side is sufficient to render the general truth practically proved. Such is the character of the greater part of the scientific truth of the world. But the questions involved in Kant's antinomies differ from ordinary scientific problems in two respects. On the one hand, infinity must be proved, which demands special evidence; but, on the other hand, there are no facts opposed to infinity, all the evidence being on one side. Not one circumstance can be named which points to a beginning or end of either time or space, while every fact and every law that human observation and reflection have brought forth point to the boundlessness of both. Only ignorance of these facts, and failure to exercise the rational faculty, can prevent the mind from conceding this truth.

We will pass over the second antinomy relative to the divisibility of matter, since in formulating it Kant seems to have mistaken the skeptical for the dogmatic side. Popular belief has usually rejected while science has steadily tended to establish the reality of matter, which is the same thing as to establish the existence of the ultimate indivisible atom.

The third antinomy, which is the representative one, has the following thesis: "Causality according to the laws of nature is not the only causality from which the phenomena of the universe may be derived. It is still necessary to assume a causality through freedom for their explanation." The antithesis is: "There is no freedom, but every thing in the universe takes place according to laws of nature."

The issue is here squarely stated, and here it is that accumulating knowledge of the nature of things is working steadily and uniformly against the dogmatic and in favor of the empirical side. Absolutely no facts are being discovered in favor of freedom, while every thing is ranging itself on the side of universal law. From one department after another, and in inverse proportion to the complexity of the phenomena, and hence in direct ratio to the ease with which they are comprehended, science is eliminating all the facts which require the hypothesis of freedom for their explanation.

From astronomy, from geology, from physics and chemistry, these eons have been successively expelled; they are now being driven from their fortifications in biology to their citadel in psychology. Even here they are vigorously attacked by the school of Bain and Spencer on the one hand and of Flourens and Ferrier on the other, and the interval between physics and ethics is spanned by the heartless clinics of Maudsley.

We need not go further and state the fourth and last of Kant's antinomies, viz., that relating to the existence or non-existence of a "Necessary Being." The first and third antitheses established, constitute the premises for the establishment of the fourth. Eternal matter with its eternal activities suffices to account for all the phenomena of the universe, which are as infinite in causation as in duration or extent. All departments of science confirm this truth. Like many other once useful hypotheses, that of *theo-teleology*, which, as already shown (vol. i, pp. 29, 58), was suggested by the fact of *anthropo-teleology*, has outlived its usefulness, and, where still called in, becomes a burden to the advancement of science. In astronomy, the nebular hypothesis, which Kant founded and Laplace demonstrated, has completely superseded it. In chemistry and physics, the atomic theory, formulated as a philosophy by Democritus and established as a science by Dalton, renders it redundant. In biology, the law of adaptation, clearly stated by Lamarck, and that of selection, cumulatively demonstrated by Darwin, and the inter-operation of these and that of heredity, thoroughly set forth by Spencer and Haeckel, have freed this field from teleological trammels almost as completely as those of the less complex sciences have been freed from them. And thus is science marching relentlessly forward, and reclaiming one field after another that had been so long given over to dogmatic conceptions, until there is now scarcely room to doubt that its conquest must ultimately become complete.

But what is it that has thus been accomplished? It is nothing less than the establishment of the antitheses, or empirical propositions, of Kant's antinomies. They have been removed from the domain of transcendental philosophy, subjected to scientific methods, such as are applied to all other problems, and proved as other propositions are proved by the inductive method. The eternity of matter and motion and the infinitude of space have passed into scientific postulates, while the uninterrupted and unlimited causal dependence of all phenomena in their relation of antecedence and sequence is the fundamental axiom from which all scientific investigation now proceeds. The entire self-sufficiency of the universe is the great truth which advancing intelligence is daily perceiving more clearly.

But we are more especially concerned here with the two rival modes of thought. It is incorrect to suppose that the causal process is wholly excluded from the minds of those who think habitually upon the dogmatic side. The expressions teleological and genetic only represent the two extremes. All teleologists reason more or less, but it is within the safe limits of known premises. They, too, recognize natural laws as operating within certain spheres, whose extent is measured by the amount of each one's knowledge. In some the field of natural law is confined to the every-day physical phenomena around them—the running of water, the falling of bodies, the action of the winds, etc. In others, with a wider outlook, it may include all the phenomena of astronomy, physics, chemistry, and the present known facts of geology. Still others, somewhat better informed, may reject geological cataclysms, but account for all vital phenomena on teleological principles. Not a few believe biology to rest on a mechanical basis, but deny this of psychology. And there are even some physicians who, from their familiarity with mental changes brought about by direct dealings with the brain, have been thoroughly convinced that thought is a product of nervous organization, but who, nevertheless, can not be brought to regard social phenomena as reducible to law. To all these various grades of dogmatism must be added that still more complex compromise, nowadays considerably in vogue, which one of its eminent defenders[*] has called "evolutionary teleology," and which consists in conceiving the universe as so planned *in advance* as subsequently to work out without further interference, and in a strictly genetic and mechanical way, all the results that science has been revealing.

These various shades and grades of teleology, always mixed with some rationalism, have led Professor Haeckel to characterize the whole school as the *dualistic*[†] school, while from their consistent adherence to one uniform principle he very appropriately denominates the other the *monistic* school. While there certainly exist innate proclivities in different minds to adopt one or the other of these modes of explaining natural phenomena, proclivities which are almost constitutional, nevertheless the germs of rationalism exist in all minds, and may be developed by expanding the mental horizon. Increased knowledge, if able to influence the habit of thought at all, must necessarily influence it in the one way of diminishing the number and strength of teleological beliefs, and increasing the area over which genetic conceptions hold sway. The schism, therefore, though fundamental, and impossible ever wholly to obliterate from the human mind, is not so hopelessly fastened on mankind as for ever to exclude the truth. After all should have been compelled to accept mechanical causation and reject teleology, this fundamental intellectual divergence would find other but more innocent grounds of difference. The history of men's opinions respecting the truths of astronomy and geology shows that the most obdurate will not always resist the march of established facts. The intellect is honest at least, and will yield at last, although it may require mountains of proof. In this fact lies the hope of the success of rational ideas and genetic conceptions.

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[*] Professor Asa Gray, "Darwiniana," chapter xiii.

[†] One of the most extreme cases of "dualism" which has yet been placed on record may be found in the inaugural address of Professor G. J. Allman before the Sheffield meeting of the British Association in 1879. After having entered into an elaborate argument to prove that irritability is simply a property of protoplasm, and that therefore the phenomena of *life* must be reduced to this physico-chemical explanation, and after establishing his position with all the force and positiveness that the most extreme monist could demand, he concludes his address by warning his audience not to infer that the phenomena of feeling and thought are in the least involved in this demonstration. Irritability, which is the basis of all motor phenomena, is clearly a property of the chemical substance protoplasm; but sensibility, the basis of sensor phenomena, is something wholly distinct and independent. He thus quite ignores the obvious fact that along with every manifestation of irritability, every contraction or extension of the protoplasmic substance, whether in the primordial utricle of Mohl that lines the cellulose membrane of vegetable cells, or in the soft protoplasmic substance of the *Myzomycetæ*, or of the *Amœbæ*, or in the muscles of creatures of high organization, there must go some form of recognition of external presence which, however vague or feeble, is nevertheless the rudimentary form of sensation and the *substratum* of consciousness and mind. Far more rational and consistent are Professor Haeckel's most extreme views respecting the "Zellseele," the "Plastidul-Seele," and the "Atom-Seele." (See his Munich address, delivered September 18, 1877, "Die Entwickelungslehre," u. s. w., Stuttgart, 1877.)

It is further worth remarking that, while nearly or quite all teleologists admit genetic explanations in certain fields, whose extent varies with each individual's intelligence and information, no one is adjudged a true causationist who recognizes the possibility of teleological explanation anywhere. This is not a line arbitrarily drawn by the ruling party, like the color-line in the United States, according to which the least African blood in a man's veins makes him a "colored man." It is a natural division in which both parties acquiesce. This, again, illustrates the fundamental psychological character of the classification. It is established on the line between the natural and the supernatural. The question whose answer determines to which class any one belongs is not, To what extent do you admit the supernatural? but, Do you admit the supernatural at all? If so, you are a dogmatist. For, if you are capable of admitting it to a small degree, you are equally capable of admitting it to a large degree. The effect of this is to limit the number of naturists and proportionally to diminish their influence. Nevertheless, all teleologists are not to be regarded as equally bad. So little rationally consistent is the human mind that the chief progress which rational ideas have made has been by increasing in each individual the degree of his always partial rationalism at the expense of that of his still partial dogmatism, until the former at length comes so far to predominate over the latter as to control the greater part of his thought and action. It is thus that many persons of sincere theological convictions are able to embrace at the same time a large share of the philosophy of evolution. They may be wholly incompatible, but are nevertheless each stowed away in separate chambers of the brain in such a manner—unintelligible to consistent causationists—as not to molest each other.

The only adequate explanation of the possibility of this wide-spread dualism is to suppose that, in the main, teleological ideas (or rather the natural attachment to them) are inherited, while genetic ideas are chiefly acquired. But a constitutional predilection for any class of ideas may become hereditary if made a part of education. The scientific method of thought prevails far more of late than formerly for this reason, and will doubtless continue to increase by heredity as science is more thoroughly and universally taught in the schools. It is therefore natural that, while theology is taught in the churches and science in the schools, the two modes of thought should co-exist in all minds which have not deliberately and independently worked out a searching analysis, and made a candid and thoughtful comparison of their respective claims. No dualist can have done this, and all teleologists are at the same time dualists. Very few dysteleologists are so from inheritance. Nearly all can remember when they were dualists also. It is the special characteristic of this class—thus far, at least, in human history—

that they must be independent thinkers. The unthinking masses are necessarily teleological in their mental make-up. With all the disadvantages, therefore, of the wholly emancipated rationalist, he can ever feel the proud consciousness of owing his principles to his own individual efforts to set himself right with the surrounding world, and that it is reason and not education, much less heredity, to which he owes his intellectual liberty. The tables may yet turn, and rationalism constitute the rule, but it is safe to predict that, when this day arrives, teleology will have disappeared entirely, and the rival of the present rationalism, if it has one, will be some still truer and purer form of causational philosophy.

Returning now to the general classification previously made of the several modes of regarding the phenomena of the universe, let us consider each one somewhat more in detail.

We saw that out of the general teleological method there have grown up several subordinate sects, each of which takes a somewhat different view of the question. The three principal of these we will briefly glance at here. The three doctrines most prominently maintained are: 1, divine free-will, or continuous special interference; 2, predestination, or foreordination; and, 3, fatalism.

The first of these assumes that the deity dispenses events as he pleases, that he watches with a personal eye over the affairs of his creation, and interposes whenever and wherever to him seems proper. It regards him in the light of a sovereign, exercising a choice in his actions respecting both men and nature, depending, as human choice depends, upon the evidence and the circumstances of each particular case. This is the first and most natural, though least rational, belief. But more thoughtful minds discover some of its defects. They see that it necessarily detracts from the attributes of deity. In the first place, it destroys the order of the universe, and makes every thing to depend upon the temporary will of deity, which will, being unknown to man, reduces events to a condition as bad as though they were governed by mere chance. In the second place, it robs the deity of omniscience. It presumes that he makes up his mind before he acts, and this presupposes that he did not know before some things which he has since discovered. If this be the case, he can not know all things from the beginning. For if, being omniscient, he proposed to punish a man for his crime, he must have known from all eternity both that the man would commit the crime and that he would inflict the penalty. Hence events must take place by the divine foreknowledge, which is not distinguishable from foreordination, or predestination.

This latter doctrine implies that all evil is premeditated by deity, and hence it divests him either of mercy or of omnipotence. For he either could prevent evil and does not wish to, or else he would prevent it but is not able. Still, for a certain class of minds, this seems to be the safest horn of the dilemma. And in fact it is more reasonable than pure theology, since it admits necessity in phenomena.

Fatalism seeks to avoid the faults of both these theories, and casts the responsibility of events upon chance. It recognizes a deity and a law, but above both these and independent of them is fate, which controls events and is responsible neither to God nor to nature. The God of the fatalist does not control; he only exists. The ordinary routine goes on with regularity and precision, but the event, the final disposition, is subject to the unforeseen and irresistible decrees of destiny. It is a necessity, but without a cause.

The existence of evil in the world has always been the great stumbling-block of all the different schools of teleologists. So long as men alone were involved, they were able to evade the issue by regarding all evils as punishments for offenses given to gods whose pleasure was assumed to be unknown—at least, to all but the priesthood. But as knowledge of nature increased, and men reflected on their everyday observations, it became manifest that the forms of life below the human were constantly subjected to what, from any teleological view, must be regarded as gratuitous suffering. The division of all animals into herbivorous and carnivorous was a patent fact to be accounted for, as was also the apparent necessity that man should partially subsist on flesh. To be consistent, it was necessary to convict these innocent herbivores of crimes such as men were supposed to have committed against offended gods, and for which all suffering in the human family was regarded as a punishment.

It was to escape such illogical conclusions as this that rationalism first raised its protest. It first assumed the form of necessitarianism, accounting for evil on irresponsible grounds, and it can scarcely be said to have ever altered its position in this respect. We may therefore still regard the entire body of speculative opposition to teleology as constituting the necessitarian school of philosophy.

The necessitarian philosophy, while it may not avoid all unpleasant consequences, at least avoids all absurdities: while some of its legitimate deductions may be harsh or unpopular, they are at least not impossible or contradictory; while they may seem severe or humiliating, they are at least not stupid or ridiculous. Its leading principles have been already stated. They may be briefly summed up as follows:

Matter has always existed and has always been in motion. Its moving particles affect one another according to a fixed law well understood—the law of the impact of bodies. The forms thus produced are the existing objects in the universe. This unceasing and beginningless motion produces unceasing and endless change. Every change of form results in new form, and thus an infinite series of changing forms is kept up. Whatever, therefore, exists, is the particular form of the given time and place. It exists because it has been produced. Its existence is the mere result of previous existences—of causes in the nature of things. It could not be other than it is, unless those prior causes had been other than they were. Hence, it exists of necessity. Every thing is as it must be. The celestial bodies present the appearance and possess the configuration and constitution which we see, because absolute laws, operating from infinity (*a parte ante*), have given them these characters at this particular epoch. The earth shares in this regimen. Unorganized matter, whether elementary or composite, is only a particular form which it has been forced to assume. Organization is but a modification wrought under the same law. The production and transformation of organisms is the result of fashioning circumstances. It is not an external planning power, or intelligence, that adapts them to circumstances, but the circumstances themselves that produce that adaptation. In other words, animals and plants are not adapted *to* their peculiar circumstances, but *by* them.

There is one point of view from which necessitarianism must be regarded which, from its liability to be misunderstood, as well as from its intrinsic importance, requires special notice. This is its relation to the power of acquiring knowledge. The theory of necessity is scientific, as contradistinguished from all the other doctrines considered, which are teleological. As a condition of thought, therefore, it favors the acquisition of knowledge where the rest discourage it and leave the mind in a state of satisfied ignorance. This is liable to be misunderstood, because the word *necessary* conveys to some the impression of fixity, such as no effort is available to change or influence. But this is a mistake. This objection would be valid against either foreordination or fatalism, but it is not valid against causal necessity. For in the former cases every event is arbitrarily fixed. Not so in the latter. The chief condition of the event is the attempt to produce it. This is a necessary condition to its occurrence. If an effort is made, it will be sure to produce an effect. Nothing is fixed, but every thing is yielding.

Hence to try is to accomplish. This doctrine, therefore, is superior to all the others in encouraging action. But, great as is its advantage in offering inducements to exertion, it is of still greater importance in directing effort. It is in this that its chief superiority lies. For knowledge is the chief element of power in enabling the mind to exercise a control over the materials and forces of nature, and a settled conviction that effects must of necessity follow and correspond to causes, renders all efforts to acquire knowledge profitable, and the possession of any knowledge possible. Under any of the other systems there are barriers and discouragements to the pursuit of truth.

The divine free-will must be arbitrary. Unless we assume to be capable of finding out that will, we must remain ignorant of it. If we are ignorant of the will by which the universe is governed, all science is at an end, for, though we discover a law, how are we assured that it will remain such? If there is a power capable of setting the laws of nature aside at any moment and enacting new and different ones, where is the encouragement to pursue the investigation of those laws? If truth is simply the present wish of a being who is absolutely free, then the truth of yesterday is but the error of to-day. Under any form of this doctrine, the conclusion unavoidably follows that the pursuit of knowledge is fruitless. No wonder that the idea should prevail, among those who take this view, that science is wicked, that education is useless, and that propitiation is man's highest duty.

Little better is the doctrine of foreordination calculated to inspire the pursuit of truth. For if all that which exists is but the dispensation made at the beginning by the great Dispenser, then to reach the causes of things it becomes necessary to reach the will of that being at the beginning. This would be even more difficult, if possible, than to learn the present will of an ever-superintending Ruler. If events have no immediate cause, but must be referred to the beginning of time for a cause, then it is impossible to trace them or to deduce any standards by which to be guided in future. If they are the mere culminations of decrees issued an eternity ago, they are not certainly the result of law. If that which exists does so, not of necessity, but by external compulsion, there is no necessary relation by which we may determine that which will exist by that which now exists or has existed. All things are appointed both as to time and place. They are necessary, it is true, but they are not dependent; each has an independent, co-ordinate existence.

Let us see what effect such a belief must have upon the pursuit of knowledge. Evidently it is incompatible with it. For vain would be the attempt to acquire knowledge if there were no necessary connection between truths. To attempt to store away in the mind any number of independent facts is found to be a most difficult task at best. What, then, shall we say of an attempt to discover all the truths of the universe where each is absolutely independent of every other? And of what use would all this knowledge be, even if it were possible to obtain it? What assurance would we have that similar events would occur under similar circumstances? A knowledge of facts is of very little use to us unless by such knowledge we can establish some law. Of what use is the study of history to the statesman if he can derive no principles therefrom to guide him in framing measures for the government of men? Yet this could not be the case if all facts were merely foreordained, since in that case, though every fact would have a cause, yet no fact would have a necessary cause. The cause of every fact would be the same, viz., the will of the foreordainer, and one effect would be as liable to result from that cause as another. There would be no clew by which effects could be traced. When the cause was reached, it would not be the particular cause of any particular effect, but a general cause of all effects. Hence every effort to acquire useful knowledge would be fruitless. Every one who really believes this doctrine feels this; and, if there be any who profess to believe it and still advocate the pursuit of knowledge, it is because they have a certain unconscious intuition that their philosophy is unsound. They are, in fact, dualists.

But there is an intermediate school who claim that it is laws and not facts that are primordially established, and that these laws are thereafter never interfered with. The reply to this is that it is not foreordination at all. It is acknowledging the laws of the universe, but assigning to them a beginning and a creation, which is unnecessary, and betrays failure to conceive of an infinite series.

Fatalism is no better promoter of intelligence than either of the other doctrines considered. If it be not mere chance, it is at least the same thing to men, since no one knows the origin, cause, or purpose of any event, neither can know it. Therefore, it is useless to seek this knowledge; and here again, as before, the pursuit of knowledge is a fruitless task.

It makes no difference, therefore, which of the prevailing beliefs we take up: they all lead to this result. In depriving truth of its necessary character, and making it dependent upon something external to itself, they render it contingent and precarious. They assume that there either is no necessary law, or that whatever we call law is the creation of some external power, so as not to be reliable or permanent.

In contrast with all these dogmas stands the consistent philosophy of causal circumstances. The necessity of nature is a rational necessity. Its truths are such, not because they have been willed or decreed, but in and of themselves. By necessity it is only meant that phenomena are uniform and unvarying. The same circumstances must produce the same effect. If truths were not necessary, they could not be relied upon. If they were not unvarying, they could not be traced, discovered, or utilized.

Let us take an illustration. There is one class of truths which all are compelled to admit to be not only invariable and reliable, but absolute and necessary—the truths of mathematics. The most obstinate predestinarian could not, if he would, doubt that twice two has always made four, and would have done so if no decree to that effect had ever gone forth. There is no supporter of special divine supervision so illogical as to believe that Omnipotence itself implies the power of making the three angles of a triangle either greater or less than two right angles. He may claim to believe this, but at the same time he must instinctively deny it. He knows it to be impossible, and that such truths are necessary. The necessitarian doctrine simply invests all truths with the attributes which are conceded to those of mathematics. It declares that truth can not exist except of itself, and therefore of necessity. It thus invests every branch of knowledge with the character of a science, and every science with the potential positivity of mathematics. The laws of barology, of optics, of mechanics, and of chemical proportions, are already found to be in themselves mathematically exact. And, as science advances, the same harmony is found to pervade all natural phenomena. See with what symmetry the petals, stamens, and pistils of flowers are arranged; consider the adaptation of the eye to the phenomena of light; contemplate the regularity of form in crystals, in snow-flakes, in rain-drops, and in the heavenly bodies!

But it may be said that nature abounds in irregularities; that while it is true that the normal form of the crystal is a polyhedron, yet in fact most crystals are not perfect, they are usually found wanting in some facet or angle or axis; that while theoretically the normal condition of solid matter may perhaps be said to be crystalline, yet in reality the great mass of it is amorphous; that while generally there is a wonderful symmetry about the vegetable world, yet the student is puzzled with a thousand anomalies and imperfections; that the same is true of the animal kingdom, and, indeed, of every department of experimental science or practical knowledge. And it may be plausibly claimed that herein consists the distinction between mathematical and all other truth. But the necessitarian is in no way staggered by these facts. He puts the irregular as well as the regular under the dominion of law. There is a legitimate reason why every anomaly (if there still remains such a thing) should exist, a necessary cause for each deviation from the normal condition; and that cause is as absolute as the original law by which the normal condition is brought about. Furthermore, the variation is adapted to the cause of variation as precisely as the normal condition is adapted to the cause which produces it. A few illustrations may be furnished upon this point.

It may be said that the normal condition of a planetary orbit is an ellipse, yet no planet describes a perfect ellipse. All orbits are irregular. This at first puzzled and disheartened astronomers, and shook their faith in the order of the universe. But they finally found that each perturbation was occasioned; that it was not a mere deviation from, or violation of, the general law, but that, on the contrary, it was in obedience to another and a higher law—that of the mutual attraction of all matter. The absolute path of the moon, with reference to a fixed line, would present a figure which would be neither circle, ellipse, spiral, nor any other known curve. It would be considered irregular in every respect, yet every deviation from that fixed line is caused by some real and necessary circumstance. So true is this, that these irregularities have been calculated, and their true causes definitely ascertained. And if there is a reason for all these apparent anomalies, which when known will enable us to calculate in advance what the anomalies will be, why, then, is not the law that produces those anomalies as necessary as the law that governs the normal condition?

The irregularities of the more immediate objects around us, whether in the mineral, vegetable, or animal kingdom, are subject also to law. If a crystal has lost an angle, there has been some reason for it; some material circumstance has come in, and, for that particular case, set aside the general by its special law. If a flower is deficient in its regular number of petals, the same explanation applies; if a tree has a gnarled trunk or an unsightly excrescence upon it, something has caused it; and the most hideous deformity in an animal or in a human being, the most monstrous abnormity of birth or physical growth, the most loathsome ulcer or the most terrible disease—all are the results of certain causative influences which are as necessary as the laws which govern the normal condition of the vegetable or the animal world. These pathological influences must exist, or the observed results would not follow; yet, given their existence, there is no escaping these results. But their existence is something real and tangible. It is not hidden, inscrutable, or mysterious; and by patient investigation the causes of these irregularities may be discovered.

It follows from these two principles—viz., first, that the effects observed must result of necessity from a definite cause actually existing in the nature of things; and, second, that whatever does so exist is capable of discovery—that every apparent anomaly in nature can be satisfactorily accounted for and scientifically explained. And, if this is true of apparent violations of law, *a fortiori*, it is true of those things which exist in manifest obedience to law. It is here that the immense superiority of the necessitarian theory becomes evident, since it opens up to man a field of otherwise forbidden fruit.

Truth is no longer a privileged commodity; it is the common property of all who want it. The pursuit of knowledge is no longer the pursuit of a phantom. It is a safe investment of time and talent. In learning that all truth is necessary, we have also learned that it is obtainable. For, if whatever exists or happens has and can have but one definite, necessary cause, without which it could not exist or happen, and with which it could not but exist or happen, then it only remains to ascertain that cause. And, since all causes consist of real and tangible circumstances or combinations of circumstances, they can in most cases be reproduced or prevented in future according as they produce beneficial or injurious results. If we can create the same conditions, we may be sure of the same result; if we can break up those conditions, we can avoid the result. In this way, as before remarked, we may in time reach the antecedent causes of the most subtile truths of nature, whether in the field of normal or abnormal phenomena, whether in those great fields of undiscovered knowledge which are obviously governed by uniform laws or among those multiplied apparent anomalies which so obstruct the path of pure science.

It is necessary to keep constantly in view the object for which we set out—namely, to consider the mutual relations subsisting between man and nature—with a view to the effect which a correct understanding of them must produce upon human opinions and human action, which, as we shall hereafter perceive, are intimately connected. Men must first orient themselves before they can expect to go aright. A man lost in a forest, or a pilot at sea in a fog without a compass, is as likely, in obeying his notions of the direction he should go, to go in the opposite direction or at right angles to the true direction as to adopt that only course which can bring him to safety. The chances of going wrong are vastly against him. So is it with ignorant humanity in the fogs and forests of philosophy. Increasing intellectual power often serves to lead men further astray than pure animal instinct could do. False ideas are reached by reasoning from false premises consisting of deceptive appearances. Their minds become imbued with errors which they only know how to follow to their perpetual injury. And, unfortunately, many of these errors are of such a kind that they do not at all tend to correct themselves. The evils entailed in consequence of their pursuit come in such ways that they are not recognized as the results of such pursuit. So complicated are the relations between man and his surroundings, that the results of his actions, though really disastrous, often strengthen rather than weaken his erroneous beliefs. So wayward and unreliable are the dictates of pure reason that the most absurd and pernicious errors are cherished for ages, obstructing other progressive tendencies, and finally entailing premature social degeneracy (*infra*, pp. 274, 287).

Without here considering the remedy for this state of things, which will form the proper subject of future chapters, let us glance briefly at a limited number of these errors.

One of the most absurd has been the notion of the *depravity* of material objects.

How the human mind could succeed in reconciling this idea with the beauties of the universe, and with the conception of a bountiful and benevolent Creator, seems difficult to understand. It probably constitutes one of those convincing illustrations of the power of education in overriding the human judgment, of which history is so full. Certain it is, however, that this doctrine has always extensively prevailed among mankind. I speak not merely of the alleged depravity of the human mind, but of the supposed badness of every thing natural. All matter has been from time immemorial under the ban, as inherently and essentially unholy and impure. Man has been held to be totally depraved, and every desire, passion, faculty, or attribute of his nature, to be corrupt, unworthy, and unclean; hence his actions, nay, his very existence, have been condemned as drenched with moral turpitude.

It is quite unnecessary to adduce proof of the manner in which this belief has retarded the progress of the world both materially and intellectually. It need only be pointed out how subtile has been its influence, and how impossible it has been for such an error to destroy itself. Its partial overthrow in modern times has resulted from influences wholly foreign to all discussion of its merits.

We may take, next, the doctrine of *optimism*, growing directly out of the belief in an intelligent "Ruler of the

Universe." It has been maintained that every thing was "for the best," and many natural circumstances have been especially employed to sustain the belief in both intelligent and benevolent manifestations in nature.

Optimism seems so directly opposed to depravity that we might well wonder that both should grow out of the idea of a Providence. Yet they undoubtedly have done so: the latter probably from exalted and fanciful ideas of the necessary purity of the Creator and Provider, contrasted with his groveling and dependent creatures and creations; the former from the imaginary goodness of that Provider, coupled with his supposed ability to arrange all things for the best. But in this case philosophers have not, as in the other, been content to leave it a mere undemonstrated dogma, requiring faith alone to accept it. They have essayed to prove it, and are certainly entitled to the credit of having advanced some very ingenious arguments in its support. The chief of these is the adaptation of things in nature to the wants of sentient beings, and especially of man. In this it is impossible for the necessitarian to meet them on their own ground. In fact, they both claim the same ground, since this very fact of adaptation is the corner-stone of necessitarianism. But the two parties see the same process from precisely opposite points of view. The one says the circumstances *are adapted to* the creature; the other, that the circumstances *adapt* the creature. The necessitarian claims that the circumstances are the *causæ efficientes* of the created forms; the optimist, that the created forms are the *causæ finales* of the circumstances. So far, therefore, as this is concerned, there can be no further argument. The conflicting claims will have to rest upon their own respective inherent credibility. But, when the optimist goes further, and declares that no improvement in any thing can be conceived of, that all things are the very best they could be for all creatures, he has come out from his fortress of naked dogma into the open field of fact. And here he may be met. The necessitarian does this by showing instances, or if it were but a single instance, in which it is false, and, if he succeeds in this, absolute optimism falls to the ground. To do this is a very simple task. The existence of evil in the world affords of itself a complete refutation of absolute optimism. It is no answer to this argument, not even if true, that suffering tends to bring greater future happiness. For to claim that it is for the best, introduces the superlative at once, and precludes the comparative which this answer would fallaciously apply. There can be no greater than the greatest. If it was already for the best, then happiness would be already at its highest possible point. Where, then, is the room for pain or any other instrumentality to raise it higher? Neither is it possible to escape by denying that it is for the best that there should be the greatest happiness, since, if this denial were just, it has also been precluded by the previous claim that pain was for the best as a means of increasing happiness, and the optimist is again estopped.

But it is not necessary to confine the discussion to such general principles. Descending to particulars, we find that the optimistic theory is based either upon willful blindness or inexcusable ignorance. Confining it to sentient beings, we perceive that the very life and pleasure of one half the world depends upon the death and suffering of the other half. Not only do fishes, reptiles, birds, and beasts lacerate, torture, and devour one another and those lower in the scale of being than themselves, but myriads of low and disgusting vermin, almost destitute of feeling, prey upon the highest and most sensitive beings.*

But the optimist may reply to this that we only fancy all these evils because we can not see the inscrutable ways of Providence. This is the only course he can adopt, but it is simply recoiling within his rampart of dogma, where he is of course secure from all the weapons of reason, for there is as much force in a sweeping denial of this claim as in its assertion. Here, again, as in his first assumption, all argument is at an end.

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* Herbert Spencer, "Principles of Biology," vol. i, part iii, chapter ii.

There is, however, a partial optimism which is practically a much more pernicious belief than this absolute optimism, since the latter is purely speculative, and confined to comparatively few individuals who do not themselves consistently act upon it. Were it not for an unconscious current of common sense running counter to all these paralogisms of the undisciplined reason, and really guiding the chief functions of life, the holders of such beliefs would soon be brought to destruction (*infra*, pp. 271, 479). Absolute optimism, as well as the whole dogma of predestination, would, if logically pursued, put an end to all individual effort whatever, since all effort results from a recognition, conscious or unconscious, of the necessity of certain effects following certain causes.

The qualified optimism referred to consists in the belief that the wide-spread adaptation which all admit to exist in nature is in all respects perfect, being brought about according to the plan of an omniscient and omnipotent designer. The practical evil of this belief arises from a general indisposition to seek to improve that which is already conceived to be perfect. Not generally being biologists, it is difficult to make these optimists see the proofs of imperfect adaptation between the lower organisms and their environment, yet here the harmony is far greater than in the case of man. Animals are constantly so limited by the incessant friction of their surroundings that their physical aspirations are perpetually ground down into something like complete correspondence. Yet, as before remarked, this friction is always very great, destroying many times more than ever reach maturity, and repressing the inherent tendency to rise to higher stages of physical perfection—a tendency whose existence is proved by every attempt to cultivate a wild stock artificially, which consists chiefly in the removal by man of the adverse influences of its natural environment.

Not only do optimists fail to perceive these deeper truths of biology, but they are unable to see the glaring facts which human life presents in proof of the imperfection of the natural relations between man and nature. Yet, to realize this, they need but consider how absolutely dependent men are, in nearly all parts of the world, upon the appliances of an artificial civilization. Let any one of them imagine himself abandoned entirely to nature, and obliged to subsist, as do the animals and birds, in a wild state. If he wishes to rusticate for a fortnight in the mountains, he first provides himself with an extensive outfit and supplies, consisting wholly of artificial objects. Now, all these things, so absolutely necessary to his existence, are denied him by nature, and only supplied by artificially augmenting the degree of correspondence, and perfecting the very imperfect adaptation. It is only by such illustrations that we are able to realize how very slight the natural adaptation is (vol. i, p. 71). People rarely stop to reflect upon things which are not adapted to the wants of human nature, but are quick to discover any thing that is so adapted. The fact that a law or principle in nature is thus adapted at once excites their reverence and awe, and they exclaim, What a wonderful illustration of providential design and solicitude! They forget that their very astonishment at such things is in consequence, and a direct proof, of their rarity, and that the rarity of things well adapted proves an abundance of things ill adapted. The necessitarian sees no room for astonishment that there should be a perfect adaptation in many important circumstances, since it is the circumstances themselves that adapt. No one would be astonished to see a sphere come from a spherical mold, or wonder that it was not a cube or a prism. Any one would certainly wonder if it was not a sphere. Just so with those circumstances and conditions that surround every organism. The organisms are the casts from the molds of circumstances. If there were any occasion for surprise, it would be to find so much want of adaptation as certainly does exist. But this is only an apparent anomaly, since variety of circumstances produces a variety of objects, and the adaptation of those objects to the particular conditions which produced them is sufficient to preserve them; but it does not follow that they should be also adapted to other conditions which have resulted in the production of other objects. Neither is this the case, and hence all the discordant elements of nature. In the sensitive world this discord is pain, and this is the true solution of the great problem of evil.

The position of the qualified optimist is sufficiently important to justify a few illustrations. Writers of a teleological bias are continually advancing what they regard as proofs of intelligent design and benevolent provision in behalf of sentient beings, especially man. In fact, until within quite a recent period, all philosophy was strictly anthropocentric, and the lower grades of creatures capable of enjoyment and suffering were wholly ignored. But, in more recent times, a few of this school have expanded their scheme to embrace the animal world in general, rendering it zoöcentric instead of anthropocentric, although the existence of large orders of purely predatory creatures, wholly dependent upon their power to inflict pain and death upon the rest, is a somewhat discouraging fact for their philosophy to assimilate.

Most of the examples that have been brought forward as establishing the operation of a designing intelligence and benevolent intent in the universe can be classed under two general heads. They are either (1) cases of natural or genetic adaptation, or (2) they are mere coincidences.

Let us examine a few of each class.

Mr. G. J. Romanes, whose utterances are generally worthy of the highest respect, in an article in the "Quarterly Journal of Science," 1876, speaking of the maternal instinct, says: "The mother in tending her young does so in obedience to an inherited instinct, and not from any fear of subsequent self-reproach if she leaves her family to perish.

She follows the maternal instinct, so long as it continues in operation, just as she would follow any other instinct; and it is, as it were, *a mere accident* of the case that in this particular instance the course of action which the instinct prompts is a course of action which is conducive to the welfare of others."

Now, Mr. Romanes well understands that this "mere accident" has been the result of the normal operation of the law of genetic adaptation, and, if questioned on the subject, would doubtless not hesitate to acknowledge it. This renders it the more remarkable that he should have allowed this passage to go unqualified as an argument for the teleologist. It has been shown in a former part of this work (vol. i, p. 469) that not only in the case of the maternal instinct but in that of all the life-preserving instincts, the gustatory and sexual not excepted, there is absolutely no direct connection between the motive which secures the performance of these necessary acts and the important ends which they subserve. The acts are performed, even by men, in strict obedience to the immediate desires; and the resulting nutrition, reproduction, and protection of offspring, are wholly secondary and incidental, rarely or never thought of in connection with the acts. It is strange that teleologists have not more frequently urged this important fact, but it seems not to have been recognized by them as such. The belief has generally prevailed that these acts were performed with the remote end in view, and the recognition of the real truth has not come until the law of genetic adaptation had been developed to explain it as a rational fact.

The excess of male over female children born has been cited as a case of providential design to compensate for the greater degree of exposure to fatal influences, particularly in wars, of the male sex. This is not yet established as a fact for the entire population of the globe, but appears to be true for most countries where accurate statistics have been obtained. Neither is it fully proved that the increased mortality by violence among males more than compensates for the increased mortality of females due to the greater delicacy of maternal functions. But, should both these doubts be resolved, and the excess of male births established as a scientific truth, it would be one not difficult to account for on adaptation principles.* For any result which can be shown to be advantageous to the race is sufficiently explained by its advantageousness.

The fact that the specific gravity of aquatic animals is almost exactly that of their medium has also been referred to, as well as the allied fact that the bones of birds are hollow and communicate with the outer air; but these cases are too obviously the results of natural selection to require further notice.

There are, however, certain correlated facts whose direct connection is more obscure, and some of which are doubtless only partially natural and partially accidental. One of these is the favorite theme of teleologists, already referred to a few pages back, viz., the coal-measures. Their existence certainly had no direct connection with the development of the lower types of life, including that from which man sprung, or with man's development down to the end of the sixteenth century, when coal first began to come into general use as fuel. If this fact is to be directly connected with his development, it must be at a time subsequent to that date, and probably during or subsequent to the present epoch. The extensive destruction of the forests in Western Asia and Eastern and Southern Europe, if continued throughout Northern and Western Europe and America, must soon entail the same degree of degeneracy over the whole globe which is now manifest in those regions, once the center of the highest intellectual activity. Not that there were not other causes associated with this one in bringing about that result, but this cause alone, especially in colder latitudes, must, in the absence of any substitute for wood as fuel, eventually result in rendering the world uninhabitable except by a race of miserable beings. In so far, therefore, as the coal-beds have operated in any sense as a direct cause of the present status of the human race, this can only be predicated in the general sense that, by the removal of the excess of carbonic acid and liberation of its combining oxygen, the process by which they were formed at the same time purified the atmosphere so as to render the development of creatures of a higher organization possible, which, from the constitution of the universe in general, is equivalent to rendering their development necessary. In this sense it is a case of adaptation, but in any other it must be regarded, up to within a recent period at least, as simply a coincidence.

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* Spencer, "Principles of Biology," vol. i, pp. 237, 449.

Very similar to this case is that insisted upon by Hugh Miller * and others, of the late appearance, geologically speaking, of the most important economic families of plants, and particularly the *Rosaceæ* and *Gramineæ*. That the existence of the higher herbivorous, graminivorous, and frugivorous animals, from some line of which man has unquestionably descended, was in a large measure due to the previous appearance of the kind of flora necessary to supply them with food of that nutritious character consistent with their full development, there can be no doubt. It is, therefore, perhaps, not too much to say that, but for the previous development of such a vegetation, no such higher animals, and *a fortiori*, no such being as man, could have made their appearance. A picture representing the horse, the buffalo, and the orang, seeking a subsistence amid the ferns, Lepidophytes, and Calamites of the Carboniferous epoch, would constitute an anachronism whose realization it would be impossible to imagine. Much less could man have subsisted there, even granting the respirability of the atmosphere. In this sense, the higher animals, including man, may be regarded as the products of the improved character of the vegetation, considered as the efficient cause of their existence. In any other sense, the two facts are simple coincidences.

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* "Testimony of the Rocks," p. 78.

We will now enumerate a few cases of the advantageous co-existence of facts, between which no mechanical *nexus* can be discovered.

Kant announces,* as a discovery of his own, the fact that the spheroidal form of the earth is of the greatest advantage to its inhabitants in preventing irregularities in its motions due to mountain-ranges and other inequalities of its surface, which the great mountain, as it were, the *meniscus*, at the equator, in consequence of its position and superior mass, neutralizes and causes wholly to disappear. "And yet," he adds, "this wise arrangement is explained without hesitation from the equilibrium of the formerly fluid mass of the earth"; implying that its advantageousness alone might have furnished a sufficient explanation. On this we need only remark that inasmuch as the mechanical explanation is complete without the teleological one, and will apply to any case even where it might be a disadvantage, the latter is at least unnecessary. The fact is clearly a simple coincidence.

One of the most interesting of all these happy coincidences in nature is found in the fact that there is no natural relation, and therefore no fixed proportion, between the dispersive and the refracting powers of different substances; a circumstance of which opticians have taken advantage in the construction of the achromatic lens, which, it would seem, could never have been accomplished if these two properties had increased or diminished in the same ratio.

Instead, however, of this indicating benevolent design, there certainly would seem to be a much greater natural antecedent probability that these properties should be independent of each other than that they should be dependent upon each other. We are therefore simply admiring a result that we should certainly have expected had it possessed no advantage or disadvantage. Much enthusiasm is expended on cases of this kind.

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* "Kritik der reinen Vernunft," S. 461, note.

The great velocity of light has been referred to as facilitating astronomical observation, "and it is remarked by Brinkley that, if the velocity of light had been much less than it is, astronomy would have been all but an impossible science." * This is a typical case among many where the good or bad effect is determined wholly by the *degree* of the quality referred to. In all such cases it is equally proper to say that the result might have been more satisfactory. If the facts must be characterized, we are always left in doubt whether praise or blame is in order. People who see the world from this point of view are always thankful for misfortunes—thankful that they are not worse. This form of fallacy is also very popular.

There is one other subdivision of this class of beneficial coincidences that may be distinguished. These are cases in which the advantage is more apparent than real, and becomes greatly reduced or disappears altogether on closer examination. A single instance under this head must suffice. It has long been known that water attains its greatest density at about 39½° Fahr., or 7½° above the point of congelation. This fact has been insisted upon by certain physicists, and notably Count Rumford, as a capital argument in favor of a wise beneficence in nature. In consequence of this property, it was argued that, as a mass of water cools, the colder particles do not descend to the bottom, but, after attaining the temperature of 39½°, float on the surface, where congelation begins. The sheet of ice once formed protects the water below it from the further influence of cold.

If freezing began at the bottom, they say, large reservoirs of water, during winter, would become solid blocks of ice, which the succeeding summers could not melt. Count Rumford went so far as to claim that, but for this wise provision, the ocean itself would be frozen solid, and navigation rendered impossible.

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* See a note, by Mr. James Spedding, to Bacon's "Novum Organum," "Works," vol. i, pp. 483, 484.

To this last supposition, the sufficient answer is that the same law of density does not obtain in salt as in fresh water. Humboldt, in his "Kosmos,"* stated that "fresh and salt water do not attain their maximum density at the same temperature, and the quantity of salt of the sea lowers the thermometric degree of the greatest density." It has since been discovered that sea-water continues to contract down to the freezing-point,† thus placing the ocean in precisely the same deplorable condition from which it was supposed a kind Providence had rescued it. Next, as regards fresh water, the theory, upon closer inspection, proves fallacious. Its authors, in laying it down, failed to discover that, by thus sinking, the upper stratum of water would immediately find itself surrounded by a warmer stratum, and again become liquid, the result of which would be that there would be no ice at all upon our streams and lakes until the whole body of the water reached the freezing-point, which would require the same intensity of cold which it now requires to freeze them solid.

Water, as well as ice, is a protection against cold, and the temperature of freezing does not occur at certain depths beneath the surface of a lake any more than it occurs at certain depths beneath the surface of the ground, although that depth is doubtless considerably greater. If ice were considerably heavier than water, so as to tend at once to sink as soon as formed, it is doubtful whether large lakes would ever freeze at all, except perhaps in shallow places around their shores, for each particle at the surface, as soon as it congealed from contact with the colder air, would descend immediately to a stratum sufficiently warm to melt it, and this process would go on incessantly and insensibly, without producing any visible effect.[*] It could never be cold enough to freeze the entire mass to the bottom. Yet, notwithstanding the defectiveness of all the reasoning with regard to this subject, we still find it forming a part of modern text-books,[†] and occasionally creeping into the advanced modern literature of the times.[‡]

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* Vol. I, S. 195.

† Inaugural address of Dr. William B. Carpenter before the British Association, August 14, 1872.

It was even supposed that water was the only substance which reached its maximum density above the point of solidification. But it was at length discovered that glass possesses[#] the same property, and now it is asserted that this also is the case with many other substances, such as bismuth, antimony, and even iron.[‖] Independently, therefore, of all design, the chances that water should possess this property are about the same as that it should not. But, as already shown, the property itself is of doubtful advantage to man.

A very good example of the pure coincidence favorable to human welfare is found in the manufacture and use of alcohol. The love of intoxicating drinks evinced by savage races shows that, had the art of distilling them been sufficiently simple to place them without restriction within the reach of primitive man, this appetite would probably have been indulged to the total destruction of the race at an early stage in its career. It is certainly a fortunate circumstance that the manufacture of alcohol can only be accomplished by men whose cerebral development has advanced so far that they are able to foresee its evil effects, and, in a great degree, control their appetites. Races so low as to be unable to do this have not sufficient intelligence to manufacture the substance which renders it necessary.

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[*] See an article by Professor Huxley in the "Contemporary Review" for May, 1873, page 839, in which he says, speaking, however, of sea water, "For, however bad a conductor of heat ice may be, the unfrozen sea-water immediately in contact with the under surface of the ice must needs be colder than that farther off, and hence will constantly tend to descend through the subjacent warmer water."

[†] "Loomis's Natural Philosophy," fifth edition, pp. 203, 204; also, Youmans's "New Chemistry," 1867, pp. 200, 201, etc.

[‡] See an article on "The Physics of Ice," by E. Lewis, Jr., in "The Popular Science Monthly," vol. v (1874), p. 402.

[#] Perry F. Nursey, C. E., "Tempered Glass," "Popular Science Review," vol. xlv (1875), p. 231.

[‖] Ganot's "Physics," p. 261; Bauermann's "Metallurgy of Iron," p. 233; Miller's "Chemistry," vol. ii, pp. 595, 604.

It would seem, however, upon the whole, that, as the case thus far considered stands, it is a weak one for the optimist. Granting all he claims, and giving to the facts a fair and reasonable interpretation, stripped of certain obvious popular fallacies, there is very little material out of which to construct the teleological edifice. Unless he rejects the adaptation theory altogether, the greater part of his illustrations are turned over in a body to the side of the evolutionist. A large share of those which remain are such as would be as likely to occur in the manner that they do as otherwise, under the operation of the mathematical law of probabilities. A considerable proportion of the balance turn out to be of doubtful advantage when fully understood. The few coincidences that are left are probably no more numerous than are found in any department of natural phenomena. Coincidences are always liable to occur, and any one who has ever dealt with masses of wholly independent facts, such as occur in the ordinary course of human events, private life, or public business, has learned that very remarkable and complicated combinations of facts and figures are frequently brought out—a fact which has given rise to the familiar proverb that "truth is stranger than fiction."

Fully to secure the force of the little which his case *prima facie* affords him, however, the optimist must also show that there exist no instances in nature of the opposite class—cases in which the facts exhibit an obvious disadvantage where advantage would appear to have been as much to be expected. A single case of this class is fatal to absolute optimism, and even a very few would militate powerfully against any form of qualified optimism.

What, then, is the real state of the case? Are there, in fact, any good examples of dysteleology in nature? Do we actually see any want of adaptation of the organism to the environment? Are there any imperfections in the degree of correspondence? To the biologist, these are puerile inquiries. To the moralist, the historian, the statesman, they must sound strange. To any intelligent observer of the world, men, and things, they must suggest a doubt, either as to the seriousness or the sanity of the interrogator.

While it may cost some pains to catalogue a respectable number of genuine arguments for optimism, it is not the least trouble to multiply evidences to the contrary. Optimists meet with them as frequently as other men, but refuse to admit them. As Lord Bacon says, they "mark when they hit, but never mark when they miss."

We will enumerate in a rapid manner a few typical cases of this kind, each of which will doubtless suggest a number of others of its own general class. For convenience, these facts may be roughly subdivided into three groups. Those falling under the first of these groups are such as exhibit a condition generally unfavorable to life on the globe, either of plants, animals, or men. Those falling under the second group are such as negative, in one form or another, the assumption that the human race is in any manner the special object of benevolent design. Facts of the third group are those in consequence of which the progress of the world tends constantly to defeat itself.

Of the first group, which may be called *anti-biocentric* facts, let us first take an example or two from the vegetable kingdom.

The outer bark of many trees, though of course essential to the retention of the sap and protection of the inner bark, becomes, in consequence of its failure to keep pace with the fresh-growing tissues of the rest of the trunk, a great hindrance to the process of natural enlargement, by binding the trunk too tightly and compressing the cells of the cambium layer. The longitudinal grooves in the bark of most trees are due to the tardy yielding of this constricting force. A simple provision for the natural vertical separation of the corky layer into narrow strips would have greatly facilitated all arborescent vegetation. So obvious is this that horticulturists actually secure this object, and very successfully, by artificially slitting the bark.[*]

The phenomenon of the autumnal blooming of vernal species of plants has been very frequently remarked. The writer has accumulated numerous very interesting examples of this class in the vicinity of Washington,[†] where many of the Northern and Southern species join. The period of warm weather which generally occurs here in October, frequently extending far into November, or even up to the Christmas holidays, is very favorable to this result. Now, plants thus blooming a second time can not, as a general thing, yield a second crop of fruit, and the second blooming is therefore wholly in the nature of a miscarriage. Other early spring bloomers often come out fully during a warm period in February, or even in January, and are as certainly smitten by the heavy frosts which are sure to follow. This is not only noticeable of certain Japanese species which can not become adapted to the differences between our climate and that of Japan, but is true of a number of native trees, such as the silver maple.[‡] It also occurs in their native haunts with certain herbaceous plants such as *Anemone Hepatica*, *Sanguinaria Canadensis*, and *Claytonia Virginica;* and the spadix of *Symplocarpus fœtidus*, the skunk-cabbage, is often

[*] Sachs, "Lehrbuch der Botanik," S. 785.

[†] See "Field and Forest," vol. iii, p. 172; "Bulletin of the United States National Museum," No. 22 ("Guide to the Flora of Washington and Vicinity") pp. 32, 238.

[‡] Specimens of the staminate flowers fully blown of *Acer dasycarpum* were collected by the writer from trees in the streets of Washington on January 15, 1876. Of course, these blossoms were ephemeral, and could not have fertilized the female flowers of adjacent trees, since in these there was no approach toward the bursting of their thick downy bud-coverings.

found blighted, owing doubtless to its extremely precocious development. On the theory of an intelligent direction, none of these cases could occur, but, referring every thing to uniform causes, this is precisely what we should expect to find.

Let us next take a few examples from animal life.

The sting of an insect consists of the ovipositor of the female transformed into a weapon of defense. In some, it is so strongly barbed that when thrust into another body it can not be withdrawn, and the attempt to do so results in extracting the sting from the insect's body together with the viscera with which it is attached, resulting in the death of the insect.* Every attack is therefore a suicide, and the destruction of so many females must be disadvantageous to the species. The optimist must explain why so serious a defect was not avoided.

Female opossums having only thirteen nipples have been known to give birth to fifteen or sixteen young and place them in the pouch. Now, the life of each embryo (for when thus born they are scarcely more) depends upon its permanent attachment to one of the nipples of the mother. In these cases, therefore, one or two of the embryos must of necessity perish, † a result which is out of all harmony with either intelligent or benevolent design.

Many other cases in which there is a similar lack of correspondence have been pointed out.‡

The fatal propensity of moths and beetles to fly into a flame is a fact which all have observed, heaps of *Ephemeræ* frequently lying upon the ground in the morning at the foot of the lamp-posts.

The tameness of birds, etc., on newly discovered islands has been much dwelt upon in late years.# Of course, it is

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* Darwin, "Origin of Species," p. 197.

† See an article on "Opossums and their Young," by Professor W. S. Barnard, in "The Popular Science Monthly," vol. viii (1875), p. 156.

‡ Spencer, "Principles of Psychology," vol. i, pp. 320, 409.

Darwin, "Journal of Researches," etc., p. 398.

explicable on the theory that they have to learn the nature of man by experience, but on the teleological theory these poor creatures should have had an instinctive fear of man implanted in their natures.

M. Littré[*] refers to the unfortunate fact that animals attacked with rabies, however innocent at other times, immediately acquire a disposition to bite, whereby the dreadful malady is propagated to other creatures. But for this fact, hydrophobia would be of comparatively rare occurrence. It must require considerable ingenuity to explain this optimistically. But, if this disease is due to the multiplication, within the blood of the victim, of a particular species of germ, natural selection will account for the fact, since it is clearly to the advantage of the disease-organism that it be conveyed to many individuals, and the particular effect necessary to create a desire in the animal bitten to bite others is one which the disease-organism may be impelled to produce, and the tendency to conduct itself in such a manner as to produce this effect would become hereditary.

Mr. Herbert Spencer points out[†] the disadvantages under which certain imperfectly integrated annelids labor, from the possession of a multitude of similar organs in different segments, and insists that they can not be accounted for teleologically. In higher forms they mostly become atrophied from disuse. From the point of view of evolution, the fact is, of course, perfectly explainable.

Passing now to the second class of anti-optimistic facts, which may be called the *anti-anthropocentric* group, we find them equally abundant and obtrusive.

An important sub-group of these consists of those "rudimentary organs,"[‡] as they are called, which, while they perform no known functions, are at the same time the cause and seat of dangerous diseases.

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[*] "Préface d'un Disciple" to Auguste Comte's "Philosophie Positive," vol. i, p. xxiv.

[†] "Principles of Biology," vol. ii, p. 92.

[‡] The term "rudiment," as employed in biology and now firmly established, is a manifest departure from the normal sense of the word, which is that of an

Such, for example, are the tonsils, which are of no intelligible use, and yet very much subject to take on a diseased condition. Persons afflicted with tonsilitis rarely recover from it until the tonsils have either been removed entirely, or so lacerated by repeated lancing that they have lost their form and special character.

Quite near to the tonsils, and like them in this respect at least, is the thyroid gland. Wholly functionless and physiologically useless, this gland is, nevertheless, the seat of the serious disease called goitre or bronchocele. Wilhelm Müller has shown that the thyroid gland is a lingering representative of what is called the "hypobranchial groove" of certain lower animals, in which it serves an important purpose in conveying food to the stomach.*

The vermiform appendage of the human intestines has already become a trite example under this head. Besides the danger that some extraneous substance, in passing through the system, may perchance be thrust into it and cause a fatal inflammation at such a delicate and inaccessible part of the body, there is the liability that it may cause a constriction in the intestine sufficient completely to choke up the passage. Eighteen cases of this latter class are said to have been recorded as verified by autopsy down to the

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original, or initial, form. It is too late to deplore the adoption of a term which tends to mislead the mind upon a vital principle of science, and need only be pointed out that its employment in this sense was due to an original misconception, on the part of early naturalists, of the true nature, history, and genesis of these organs. They appeared to them to be incipient but abortive organs which never had attained to the performance of any function, and in this case, as in all others, language was built up on the apparent and superficial. As, however, there do exist a few true rudimentary organs, *i. e.*, organs obviously in process of development, it is greatly to be wished that a different term, as, *e. g.*, *vestiges*, might be adopted to denote those obsolescent organs which have become atrophied from disuse.

* Haeckel, "Anthropogenie" (1874), S. 615.

year 1873.[*] Modern biology readily accounts for this organ as a vestige of the cæcum of the lower animals.

A fact of less general renown, but equally applicable here, is the exposed condition of the lower extremity of the spinal canal. In the enlargement of the sacral vertebræ incident to the assumption by man of the erect posture, an opening was left by which the spinal canal is unprotected by any osseous covering. In cases of protracted illness, the bedridden patient often lies so long upon this part that the fibrous membrane and skin, by which alone this most delicate region is protected, take on inflammation, which ultimately extends to the envelopes of the spinal marrow, constituting rachidian meningitis, which is almost always fatal.[†]

A few more anti-anthropocentric examples selected from widely different fields may be added.

Let us take the fact that the science of meteorology, although probably the most practically important of all the domains of human activity, whether we consider its bearings upon industry or commerce, is, nevertheless, of so complicated and irregular a character that it has only been during the last few years that the attempts to prosecute its study have been attended with any practical advantages whatever, and these are as yet very slight, and attained only at great pecuniary cost. We have learned the chemical constitution of the fixed stars, but can not yet predict the approach of a storm long enough in advance to prevent disaster.[‡]

The elements of the solar system are not all that could be wished, or as advantageous as human intelligence could suggest.

Laplace declares[#] that, "if the moon was given to light the earth by night, nature has not attained the object which it proposed, since we are frequently deprived of the light of both the sun and moon"; and he proceeds to lay down in detail the changes which would be required in the present relations of the motions and positions of the sun, earth, and moon, in order to accomplish that object and bring about the most advantageous adjustment.

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[*] Charles Martins, in Introduction to Lamarck's "Philosophie Zoologique," vol. i, p. lxv.

[†] *Loc. cit.*, p. lxvi.

[‡] Humboldt's "Kosmos," vol. i, S. 220.

[#] "Exposition du Système du Monde" (1835), p. 233.

If we suppose that the moons of the larger planets were designed to be inhabited, a supposition which has been defended by eminent astronomers,* it is an ill-devised arrangement that in all cases they should always present one and the same side to their primary, which during their habitable period must have constituted their chief source of light and heat.

Again, returning to the earth, it would be much better for man if there could be more day than night all the year round. The extreme difference at the summer solstice in temperate latitudes is not yet sufficient to secure the greatest economic effect. Sixteen hours of activity and eight of sleep is the average requirement of man. As the world is constituted, he therefore spends on an average four hours of the night in waking activity. The inconveniences of working in the night are manifest, and the cost of artificial light is enormous, constituting an immense drain upon the natural resources of the earth.

Taking now an example from a very different field, we may point to the prevalence of the decimal system of notation. The number ten being neither a square nor a cube, and its half being a prime number, it is evidently an exceedingly awkward basis for a system of notation. Either nine, twelve, or sixteen would have been far better, but the most advantageous number of all is unquestionably eight. The advantages of the octonal system have been frequently dwelt upon,† and not a few have indulged the dream that it might be one day made to supersede the decimal. But this at present seems hopeless. By what oversight did we come to stumble upon so clumsy a system? Why have all nations and races that are capable of counting ten adopted either the quinary, decimal, or vigesimal scale?

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* R. A. Proctor, in "Cornhill Magazine" for May, 1872, p. 550.

† See an article on "Curious Systems of Notation," by T. F. Brownell, in "The Popular Science Monthly," vol. xiii (1878), pp. 420–428.

A malevolent designer might have imposed this evil upon man to confuse his ideas and thwart his progress, but a benevolent designer must have been incapable of such an act. Teleology utterly fails to account for it, but science has satisfactorily explained it. It is because the human race *happens* to have five fingers on each hand and five toes on each foot. Or, to go further back, it is because in the transition from the finny *Dipneusta* to the digitate *Sozobranchia*, the process of elimination of digits chanced to become arrested at the number five instead of at four, or six, or eight, which number man has inherited from the ancestors of the Proteus and the Axolotl. And behold what stupendous effects from so trivial a circumstance! I can recall no more forcible illustration of the utter blindness and irresponsibility of the operations of nature.

The human body happens to possess a specific gravity a trifle greater than that of water. In consequence of this, it sinks when placed in water, unless sustained by the action called swimming. This action, moreover, is an art which must be separately acquired by each individual, and is not naturally implanted, even as it is in most other land animals, and as it should be on any providential theory of the universe. Placed on a planet, of whose superficial area two and four fifths times as much is water as land, and which he is obliged to traverse in all directions, this circumstance becomes an immense hindrance to his operations and success. Why was he not made lighter instead of heavier than water? Why not endowed with the instinct to swim? The optimist must meet these questions squarely. Science is satisfied to explain that the ancestral creature from which man descended, and whose structure and instincts he has in great part inherited, was so far restricted to terrestrial life that no adaptation to aquatic conditions was wrought in its constitution. But this leaves it free to admit that such an adaptation would be far better for man as now circumstanced.

M. Auguste Comte * has very justly remarked that the brevity of human life constitutes one of the principal causes of the slowness of our social development, both on account of the time lost by each successive generation in making the preparations acquired by its predecessor, and more especially because this spontaneous succession is always necessarily incomplete from the impossibility of placing itself in the same position and in the precise direction of previous labors. It certainly does seem as though one half of the average lifetime of all those who really achieve any useful results is spent in the preparation necessary to place them fully *en rapport* with their work. If, after having made this immense sacrifice, they could be assured a hundred years additional in which to push forward the real work of their lives, the increased results which they must accomplish would be even greater proportionally to the time than they now are. This would have a secondary influence, moreover, which would probably be more productive than its direct influence. The brevity of life serves as a powerful deterrent, not only to the laying out of a life-work, but to making the preparation requisite for its prosecution. Increased longevity would thus furnish an inducement both to acquire and to employ knowledge.

There seems no good reason, either, why human life might not as well have been double or treble what it is. If it be said that this would be contrary to our constitution, to the nature of the bodily structures and tissues, then the question remains, Why might not these have been adapted to a greater longevity? There is nothing antecedently impossible about it.† It is simply a positive fact, a necessary truth, that the usual maximum of human life is about equal to seventy revolutions of the earth in its orbit around the sun. In the only sense which properly belongs to the words, this is the result of simple chance, or accident.

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* "Philosophie Positive," vol. iv, p. 453.

† Such small and comparatively useless creatures as toads are known to possess greater absolute longevity than man.

We must content ourselves with one other example of this class.

Frequent allusion has been made to the fact that all species are circumscribed to limited areas and numbers by the action of an adverse environment. This means that in the majority of cases the number of premature deaths is sufficient to prevent that rapid multiplication by the free operation of which any one of the species living would soon people the whole world to the exclusion of all others. In many cases, the adverse elements operate to destroy unborn germs, and thus work no positive pain, but it is rare that they tend to prevent attempts to multiply or to produce infertility. The number of individuals completely gestated and actually born is many times, often many hundred times, the number that reach maturity, while the number that reach the ultimate limit of life of the species is very small.* This indicates, as before pointed out, an almost incalculable amount of friction at the periphery of each faunal area, and this wholesale destruction of life is attended with a corresponding amount of pain and suffering. To this sinister law man is, unfortunately, no exception. More than one fourth of all that are born die before they have attained their fifth year, and one half by the time the fiftieth year is reached. The full limit of life in a perfectly healthy person is probably on an average upward of a hundred years, yet the actual average of human life is only a trifle more than forty years. If we consider the case of any single individual, it always seems as if death was caused by some legitimate influence in the particular case. The particular disease is usually well known, and has long had its appropriate name in the science of medicine, and its symptoms and results, as well as often its proximate causes, are usually understood. If death is produced by accident, the circumstances attending it appear wholly exceptional and peculiar to the case in question. There is generally no difficulty in accounting for premature deaths, and assigning what are regarded as wholly satisfactory causes. Yet, looked at from the broader platform of cosmical phenomena, all deaths that occur earlier than the extreme limit of human life are really the result of this same friction of the environment which we have been considering in the animal world. They must ultimately be traced back to the influence of adverse circumstances buffeting against the perpetual strain of human effort to expand its numbers and its area, and overstep the limits prescribed by the conditions of nature and the constitution of man. They are produced by the constant tendency of the population to outstrip the means of subsistence, by the excess of the demand for food, clothing, shelter, and other conditions of existence over their supply. The weak physical constitutions of men and women are the ultimate and real cause of the multitudes of diseases to which they thus become a prey, and these weak constitutions are in turn derived either directly, or indirectly through inheritance, from the adverse influences that have beaten against them and dwarfed them. Life is and ever has been a struggle, and this struggle is only another name for friction of the environment. Even deaths by accident and violence are properly attributable to a lack of correspondence, and are analogous to those of moths that fly into the candle, or the horses of Arizona that eat the fatal astragalus. In animals thus succumbing, we say that their instincts are not adapted to the new conditions. In the case of men, we dignify the same truth by the name of "defective judgment." War itself is simply a blind effort on the part of an increasing race to beat back the waves of adverse surroundings and establish the conditions to its further increase, while pestilence and famine are the ultimate scourges which finally declare that it has already advanced too far, and must now halt or retreat.

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* An excellent illustration of the tendency in nature to multiply individuals for the purpose of prematurely destroying them is furnished by the fish called the menhaden, whose biography has been so well written by Professor G. Brown Goode, of the Smithsonian Institution, in a paper read before the American Association for the Advancement of Science, at Saratoga, in 1879, "Proceedings," p. 425. (See also "A History of the Menhaden," by G. Brown Goode and W. O. Atwater, New York, 1880.)

Such being the facts, the questions recur, Why this dreadful waste of vital energy? Why this appalling accumulation of misery and woe? If races must be circumscribed, why has not nature provided for a reduced fertility? The power to increase and multiply is never checked. Nature virtually says, You shall have every facility and every inducement to unlimited expansion, but your numbers shall be slaughtered and decimated as fast as they overrun the prescribed limits. Surely this is no optimistic scheme, and little denotes the action either of intelligence or benevolence. Necessitarianism is the only form of philosophy which can furnish an adequate explanation of such facts.

Without dwelling upon other instances of this group, it will suffice simply to enumerate the following additional but wholly disconnected facts: that the worst of all the living enemies of mankind are too minute to be discovered by the highest-powered microscopes—the so-called germs of disease; that, in those latitudes where the greatest density of population occurs, northerly winds usually prevail during the winter and southerly winds during the summer,* thus exaggerating the extremes of heat and cold; that in mountainous regions the rain-fall is chiefly on the tops of the mountains where it is little needed, while the fertile valleys require artificial irrigation; that the most useful as well as the most beautiful objects in nature are usually the most rare; that, whereas pleasures are usually moderate and brief, pains are usually intense and protracted; and that, finally, so few are the enjoyments, comforts, and attractions of life, and so many its sufferings, discomforts, and distractions, that they have furnished a basis for a pessimistic school of philosophy, and earned for the world from devout teleologists the title of a "Siberia—the penal settlement—of expatriated rebels." *

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* See the third paper of Professor Loomis in the July number of the "American Journal of Science and Arts" for 1875 (3d series, vol. x).

A sufficient number both of generally anti-biocentric and of specially anti-anthropocentric facts having been thus rapidly enumerated, let us consider a few of the third group, which may be denominated *anti-sociocentric.*

In considering in the INTRODUCTION (vol. i, p. 75) the principal barriers to the advance of dynamic sociology, a few of the most general illustrations of the manner in which human progress is constantly defeating itself were set forth. It will, therefore, only be necessary here to name a small number of more special examples under the same head.

It was M. Auguste Comte who first pointed out, and who has emphasized it with the force peculiar to his writings, that the past tendency of the human intellect has been to ignore substantial realities, and waste its energies on empty speculations respecting the causes of phenomena.† He went too far, and himself ignored the distinction between legitimate and illegitimate causes; but, while thus aiding to check the tide of progress which he contributed so much to swell, he has nevertheless abundantly proved the dangerous character of this anti-progressive tendency. The amount of intellectual energy, capable, if rightly applied, of constituting a direct motive-power to human progress, which has been expended upon the wholly non-progressive discussion of irresolvable, transcendental problems, is sufficient to appall the modern philosopher, with his eyes finally opened to the needs of mankind.

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* See Hugh Miller's "Testimony of the Rocks," p. 410, quoting from P. M'Farlane's "Solar System." In this general connection, see also a remarkable passage from the works of Jeremy Taylor reproduced in a modern work entitled "Natural Law: An Essay in Ethics," by Edith Simcox, p. 209 (motto to Chapter V).

† "Philosophie Positive," vol. i, p. 13.

It has been well said also by Comte * that, while men have always had the most need, they have unfortunately at the same time manifested the least disposition, to exercise their intellectual faculties. The only social progress which has been achieved has resulted from the exercise of these faculties, and yet this has all been accomplished by a mere handful, as it were; the great mass having remained, and still remaining, entire strangers to the process except as the passive recipients of its benefits. The possibilities which can be imagined from a universal intellectual activity tend to bewilder the mind.

Allied to this last fact, we may profitably reflect upon the manner in which, in the present state of scientific progress, the discovery of truth by the few experimenters and thinkers is distancing popular intelligence. The world is really swallowing science in doses entirely too large to be assimilated by the social system, so that positive evil constantly results, not of course sufficient to overbalance the good, but sufficient powerfully to counteract its influence.

The remedy, which lies in the direction of commuting a portion of the force of propulsion into force of diffusion, or of greatly increasing the latter while leaving the former unaffected, need not here be considered, since it is the existing fact with which we are at present concerned. (See *infra*, Chapters XIII and XIV.)

As this enumeration might be indefinitely prolonged, and must sooner or later be abruptly brought to a close, we will limit it to a single additional example, which, however, is one of great importance. It consists in the fact, so unfortunate for the progress of the human race, that each and all of the various errors, which the increasing intelligence of the world has successively swept away, have been defended to the last by at least a few of the most honored and otherwise most progressive minds of the age, and have been compelled at last tardily to succumb to a sort of popular verdict or the force of numbers of lesser lights and younger heads, reluctantly declining to follow longer those whom they had been accustomed to look up to for counsel and intellectual guidance. This truth has been so happily expressed by a modern writer,* that I can not refrain from quoting his words: "The world's greatest follies and darkest untruths, especially while in the process of dissolution, have always found some justly honored authority in theology, in literature, in philosophy, in law, and in science itself—a Matthew Hale, a Lord Bacon, a Wesley, a Cotton Mather, an Elliotson, a Hare, a Gregory, a Wallace, an Emerson, an Agassiz, a Zöllner, committees of learned academies, professors in great colleges—to stand by their bedside, armed with syllogisms, trusting their senses, and conscientiously striving to nurse them back to vigorous life."

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* *Loc. cit.*, vol. iv, p. 388.

There are some readers to whom an apology might be due for so protracted, and to them doubtless somewhat tedious, an illustration of the *pros* and *cons* of optimism—a philosophy which may be supposed to have long been obsolete. To such we can only say that it is greatly to be regretted that the mass of mankind have by no means yet reached their advanced position. While optimism, as a philosophic tenet, such as it was defined and defended by the scholars of a century ago, has, it must be admitted, ceased to engross the attention of thinking minds, the qualified form of it which has been described, and toward which the foregoing considerations have been principally directed, still forms the very warp of the current philosophy outside of the domain of science, and to a great extent within that domain. It is the essence of all teleological conceptions, and so generally pervades the received theories of life and action as to distort completely the popular view of the relations between man and the universe. The great mass of mankind still believe in a conscious intelligence, either without or within the universe, which is perpetually adjusting means to ends in nature. The majority regard that intelligence as in a manner benign and sympathetic, and, while ignoring the strifes and struggles, the sufferings and failures of the sentient world, are ever on the alert to gather evidence, however slender, in support of providential interference and intelligent design. Intelligence, however, appears rather as a product than as a quality of nature. In vain we look for an intelligent recognition of our human emotions in the galaxies of incandescent worlds above us. In vain we look for an appreciating voice from within the penetralia of the earth. True, it is not the silence of eternal rest; the stars glow and the planets roll, the crystal sparkles and the flower blooms, but not until we reach the animal world is there one token of sympathy, one evidence of joy, one ray of intelligence. Poets may tell of the smiling landscape, the modest flower, the angry ocean, or the pensive stream; these are but figures of speech, and serve only as associations for the mind. There is beauty, there is grandeur, there is activity, there is even life, but mind there is none. Thought and feeling are not there. The universe is insensible. Nature has no soul, although within her are all the elements of sensibility and all the materials of intelligence. For mind is merely a relation. Thought is a mode of material activity. Intellect is a brain-wave. To secure it only requires an appropriate form. One revolution of the wheel of organization evolved the living vegetable world; another culminated in the creation of sentient beings. Higher and higher has arisen the type, finer and finer has grown the product, till brain has become the ruling force, and man has emerged from that darkness which hitherto had never permitted Nature to contemplate herself. This highest product of evolution, and which may properly be called spirit, has been described as that which "sleeps in the stone, dreams in the animal, awakes in man."* In the inorganic world the molecular activities are on so faint a scale and so little integrated that such matter, while it is by no means dead, may be fitly called sleeping. The animal, which indeed cerebrates, but does not reflect, may justly be said to dream, while the fully awakened consciousness only appears as a product of the great complicated brain-mass of the developed man.

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* Dr. George M. Beard, in "The Popular Science Monthly," vol. xiii (1878), p. 338.

Sensation has been defined as that quality of matter by which it becomes *consciously* susceptible to impressions from without (vol. i, p. 364). This stage is reached in the combination known as nerve-matter, and feeling is evolved. Higher orders of this combination, and greater refinement and complication of this substance, account for all the phenomena of sensibility and of intellect. The first step forward is union, or aggregation; the second is the evolution of determinate forms; the third, the production of physical life; the fourth, that of conscious sensibility. These taken together may be said to constitute organization. It begins as properly with the first as with the third (vol. i, p. 311). And the very constitution of matter is such that under proper conditions it tends to organize until all these several degrees have been reached. Whether a further development is possible or not is only a matter of speculation, since this is the highest point known to have been reached in the universe. This progress may for aught we know be infinite, or it may be limited. We are compelled, therefore, to regard both life and mind as derivative; as products of certain advanced degrees of development; as results of changes in the universe, and not as inherent qualities of nature. We know that the greater part of the matter of our globe is both inanimate and unintelligent; and, judging from the conditions required here to produce these results, and from the knowledge which science has already afforded us of the rest of the solar system, we can but conclude that the earth is perhaps the most highly favored member of it in this respect, and that it is probable that the great bulk of that system is at this moment destitute of both life and consciousness.

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* Draper's "Conflict," p. 138. The words quoted here are also quoted by Dr. Draper, who says they are those of "a great German author." I have been unable to find the original, but several German authors (Oken, Novalis, Schelling, etc.) have expressed a similar thought in different forms.

The true place which mind fills in the scheme of nature is the most important truth to be learned in the study of philosophy, and, being so generally misconceived, constitutes one of the primary subjects relative to which the task of orientation undertaken in this chapter is demanded. For the true order of development is from the non-psychic to the psychic, and from the less psychic to the more psychic, and not, as is popularly supposed, from the highest toward the lowest manifestations of this property. This great psychic paradox lies at the base of philosophy, and has ever been its fundamental bane.

Classification of Phenomena.

It only remains, before proceeding with the argument, to reduce to a systematic form and to bring together in a single place the several principles that underlie phenomena, and to classify them anew with special reference to their application to the science of Dynamic Sociology.

In order to do this, some repetition of statements of these principles already made, though in other connections and for other purposes, will be unavoidable, and, in view of their paramount importance, will perhaps be regarded by the reader as justifiable.

It is tautological to say that we know only phenomena. Phenomena are simply appearances, or manifestations, and these can only exist in correlation with sense-perception. This is the starting-point of all knowledge. Whatever comes within the range of perception is a manifestation to the sentient faculty. Therefore, every thing of which any thing can be predicated is phenomenon. Feeling, knowing, and thinking beings are placed in the midst of a universe of perceivable processes. These are not a part but the whole of their experience, and constitute, so far as the psychic faculty is concerned, their universe.

Phenomena consist entirely of changes, *i. e.*, of actual alterations of location in the objects which make up the universe. These alterations of location are called motions. Unless something moves, there can be no manifestation, no perception, no knowledge. The existence of phenomena, as testified to by consciousness, proves, with all the authority of consciousness, that objects both exist and move. All there is for mind to study is these moving objects. To say that phenomena are perceived is, therefore, a circular proposition, and would be quite useless but for the fact that it suggests an ulterior truth. This truth is, that objects in motion *produce effects*. Sensation is the primary effect, but perception and experience teach that similar effects are produced wherever contact occurs. The effects produced upon the sensitive organism, unless too violent, reveal the nature of the effects produced upon other objects, and the greater part of all knowledge consists of such indirect observations.

Ignoring, temporarily at least, the nature of the moving objects, it is a convenient as well as a correct view to regard the perceptible universe as made up of changes which alone constitute the subjects of intellectual contemplation as well as the sole objects of possible conscient interest. This being the case, almost the first question which the normal mind will raise with regard to them will be, How are they caused? The causes of observed phenomena have always formed the first, and we may almost say the only, problems of philosophy.

There are two modes of conceiving the occurrence of phenomena, both of which, as we shall presently see, have a basis in fact, but their historical order is the reverse of that in which they appeal to the mind. According to one of these conceptions, material objects are acted upon by a power outside themselves; according to the other, they are automatic, or not so acted upon. The first of these conceptions is readily grasped, as being based on the analogy of voluntary muscular action; as to the second, though it might have been easily deduced from the supposed independence of the voluntary conscious agent, such was the distance which the early mind placed between the animate and the inanimate, that this analogy appears not to have been perceived until so late that the absolute freedom of action had begun to be called in question. It has thus happened that the idea of the independence of phenomena, as a conception of the mind, was a late development of scientific thought, and scarcely finds a place in any of the schemes of the Cosmos. Spontaneity—*i. e.*, the power of a body to originate its own motion from a state of rest—though really inconceivable and contrary to the laws of thought, has indeed been assumed; but the only form in which either reason or science is willing to accept the notion of change not caused by an outside power, is that which simply negatives the state of rest, and recognizes absolute continuity of motion. This, however, though a late form of thought, is now becoming an essential part of the cosmology, and is regarded as the primary, and from one point of view the only, cause of all phenomena. The *transitive* class of changes, as they may be called, viz., those due to an external influence, become subordinate to automatic changes, and are interpretable as special manifestations of force due to accidental impacts. These transitive phenomena have always been associated in the human mind with an anthropomorphic volition, and this is usually the part most particularly noted in their contemplation, so much so that it has generally been deemed sufficient to designate them as teleological, which denotes this quality only without connoting the more essential one of extraneous power as such. As the automatic conception gains ground the teleologic one loses, and fears have been entertained lest the fullest concession of the former should be followed by the complete abnegation of the latter.

So far as science is concerned, no well-settled case of absolute teleology is known, and we are therefore compelled to relegate such alleged phenomena to the department of transcendental philosophy, and to admit that all the phenomena of the universe are the result of material motions which have never been either more or less in amount than they now are, and which only manifest variety in consequence of the varied nature of the developed aggregates which have resulted from antecedent combinations.

When we remember that all matter exerts an influence upon all other matter, it becomes evident that there can be no such thing, in fact, as absolutely free motion. All phenomena must therefore be regarded as transitive in the sense that they are due to the influence of moving matter as their antecedent causes, which determine their character according to the laws of impact. The problem is therefore narrowed down to the classification of the transitive changes observed to occur. These may be readily separated into two obviously distinct groups, which may be approximately designated as *physical* and *psychical*, respectively, according as they emanate from inanimate or from animate objects.

These two classes differ chiefly in the obviousness of the immediate causes. Physically produced changes are no less due to causes than psychically produced ones. The cause is in all cases the immediately antecedent changes and resultant impacts; but, as these are simply the links in an endless chain of causation, and due to motions which belong to matter and are inseparable from it—having, therefore, never had any origin in time—it is a natural error of the mind to look upon them as spontaneous. But, as already remarked, this is a false conception, or "pseud-idea," implying origination in the series, which never has occurred.

Just what term to employ for the adequate expression of this conception has been a serious difficulty in modern science. Numerous efforts have been made to resolve this perplexity, some of which have been partially successful. Of the many forms of expression which have been suggested, none of which are adequate to satisfy all possible cases, the one which probably comes nearest to this ideal, and which we therefore adopt, is that which describes the entire class of physical phenomena as *genetic*. This word combines better than any other the idea of causation in all its delicate forms with that of continuance, without suggesting either an *origin* or a *purpose*. It furnishes an adjective for the German *Werden*, which may itself be fairly translated by the Greek γένεσις (*genesis*).

Psychic phenomena, while they, too, are indirectly genetic, in the sense that mind itself must have had a genesis, differ in many marked respects from those which are the immediate results of physical causes, and stand in wide contrast with them in all their principal characteristics. Formerly a large part of the changes now known to belong to the genetic class were supposed to be of psychic origin; but the tendency of science has steadily been in the direction of limiting this class to those which are known to emanate from organized beings endowed with a nervous system and some form of animation. Whatever difficulties may be encountered in seeking to find this line, it is at least no longer safe to speculate upon the assumed psychic origin of any phenomena which can not be shown to have proceeded from such organic forms as possess in their organization the active principle of life called *protoplasm*, however slightly this substance may have been co-ordinated and integrated into a compound and complex organism. But, while there are various degrees in the manifestation of this power of causation, depending upon the degree of organization of the creature, some of which degrees are so wide as almost to constitute generically distinct forms of force, the psychic phenomena all agree in one essential particular, viz., in manifesting a *purpose*. As causes of change, mental efforts always represent *final causes;* psychic phenomena are always *teleological*.

There are, therefore, two principal classes of phenomena, according as they are genetically or teleologically produced; and it hence becomes important, before proceeding further, to examine somewhat closely the precise nature of each of these two antithetical forms of causation, and to emphasize the qualities by which they are distinguished. We will consider each class separately.

GENETIC PHENOMENA.

We have already seen that all physical phenomena must be genetic. The only conceivable exception would be the movement of a free element independent of all others. This condition, the actual multiplicity of things, so far as human observation can determine, completely negatives. It is true that objects move by virtue of inherent activities inseparable from them, and which in the aggregate are incapable of either increase or diminution, but such is the existing plexus of material elements that the particular forms of change actually produced are determined by the interaction of multiple influences, and each phenomenon is the resultant of all the forces in operation to produce it. The simplest form of a phenomenon is seen in the impact of two bodies. However complicated the phenomenon, the same laws operate with rigorous exactness, though this truth is veiled by their subtile interaction. The conception of *force*, or *energy*, can have no other basis of fact, and all effects of whatever kind flow from the immediate physical contact of moving objects.

This truth, clearly comprehended, contains the key to the nature of all genetic phenomena. Genesis is only another name for causation, and causation is the production of change through impact. The failure to grasp this principle has arisen chiefly from the fact that a large proportion of the phenomena of the perceptible universe are *molecular*, and it has been difficult to regard molecules as identical with masses in all respects except that of magnitude. There has prevailed a species of mysticism respecting them not unlike that which savages feel in the presence of the invisible atmosphere. They have been reluctantly admitted into the category of things, and molecular physics has, in fact, been a sort of metaphysics. But the more we learn of molecular phenomena, the more we find them to resemble molar phenomena, and we are justified experimentally, as we certainly are *a priori*, in pronouncing matter uniform in its laws.

A *causa efficiens*, which is the essence of the genetic process, is simply a direct and immediate cause—one in which there is neither interval nor indirection between the cause and the effect. This forms, too, the leading distinction between genetic and teleological phenomena. In the former, the cause is always in immediate antecedent connection with the effect.

Another consideration must now be taken into the account. Genetic phenomena are observed in most cases to occur in prolonged series. There is seen to be a tendency toward the recurrence of the same set of changes in a single direction. Observed at considerable intervals of time, the changes produced during one interval are seen to be continued through the next, and results effected are more or less permanent, to be carried further at each successive interval. These series may be ascending or descending, according as the products grow more or less complex, and an ascending series may be gradually converted into a descending one; but in nearly all cases some *progress* is constantly made in one direction or the other. So far as the history of our globe is known, the phenomena taking place upon it have presented a decided preponderance of ascending series from the remotest periods of which science furnishes any account, and such would also seem to be the case throughout the solar system at large, with exceptions only in some of the smallest bodies, as the earth's satellite. There has thus taken place a sort of *development*, or *evolution*, which in the inorganic world proceeds from a more homogeneous and less differentiated state toward a more heterogeneous state with greater concentration of parts. In organic nature organization increases, structure is complicated, and the physiological division of functional labor is combined with the integration of differentiated organs and their subordination to large complex organisms.

These are surface truths. A more recondite truth often escapes detection. These perceptible effects represent only the resultant of multiple causes. Movement is only in one direction, but impact is in all directions. A law which has been called by Spencer "the instability of the homogeneous" requires that motion shall take place in some one direction, and what that direction shall be must depend upon what, in our ignorance, we are compelled to call chance. The chief fact of interest, therefore, arising out of this dynamic state of nature, is the one least observed and usually quite ignored: it is, that the increment in the direction of motion —the algebraic sum of the forces of progression and regression as compared with their arithmetic sum—is excessively minute.

Neglecting, for the present, retrogressive tendencies, which presuppose progressive ones, and considering all phenomena as undergoing the latter process, we first observe that the increments of this genetic progress are what may be called *differentials*—that the movement takes place by infinitesimal differences. This is phenomenal, or concrete, as distinguished from mathematical, or abstract, *differentiation*. The objects moving are in immediate contact with the objects moved; the latter yield only at the instant when the former impinge; the antecedent and consequent—the cause and effect—are intimately bound up together.

It is scarcely necessary to state the corollary that in genetic progress the great preponderance of force actually exerted is lost in the work of so nearly maintaining the state of equilibrium. The energy expended in the retrogressive is nearly equal to that expended in the progressive direction. But this is not all. Every object in the universe is exposed to impacts from all sides. The direction of motion is simply the line of least resistance. If we contemplate a progressing body or system, we must not only conceive its line of motion as simply that along which the antagonizing impacts are least in amount, but we must also conceive that upon all sides, except that immediately in front and that immediately behind, the impacts, however great, are absolutely equal. These lateral impacts, however, from this circumstance of exactly neutralizing each other, may be neglected, and attention fixed only on the directly impelling and retarding forces. All this is as true of a complicated train of phenomena, such as a sidereal system or a living organism or species, as of a single aggregate, or body; and progress in structural development comes as strictly under the law as mere progress in space, since, in a manner, the former may be analyzed into elements of the latter. This law may be considered in every department of phenomena, and naturally we follow the steps from the lowest inorganic to the highest organic stages.

The primary form of inorganic development of which we possess any knowledge is that of world systems. Nearly every one who allows himself to speculate at all now believes that such development has taken place, and that the earth and the solar system are products of dynamic tendencies in the universe. It is proper to call this process and all kindred ones *organization*. The term *evolution* has been applied to it, but in so doing, as was pointed out in the early part of this work (vol. i, pp. 166, 248), very great confusion has been introduced. With the qualifications there made, however, there can be no serious objection to the term evolution, implying, as it then will, the same process in organic as in cosmic phenomena. The true antagonistic forces are those of *gravitation* and *radiation;* and evolution, when it takes place, denotes a certain predominance of the former over the latter. The unchecked effect of gravitation alone would quickly bring all things to rest in a wholly unorganized state; that of radiation alone would quickly dissipate all matter into gas. The preponderance of the latter would effectually prevent symmetrical forms from evolving, while too great excess of the former would rapidly condense the matter of space into heterogeneous, amorphous masses. It is the golden mean between them that secures the true evolution of the orbs of space.

Organic evolution proceeds according to the same general law. The development of any organism consists of a series of wholly inappreciable increments, due to the resultant force in the direction of progress. Here the individual must be ignored and the species alone considered. Heredity, however, can be relied upon to preserve the identity of all directly descended individuals, so that it is as though one individual were continuous. Minor variations occur during the life-time of each individual, which are themselves transmitted, producing a steady progress in a given direction. Besides the direct variations due to the actual impacts upon the individual, in the line of the resultant of which impacts progress goes on, there is also an indirect form of variation which is probably still more potent in producing change, and which Darwin calls "selection." This operates through heredity in the direction of advantage to the organism in the competition for existence. It is under the conjoint operation of these two laws, which Spencer names direct and indirect "equilibration," respectively, that all the present living organisms have been developed from the lowest forms, and these in turn from the inorganic elements. At the head of the organic series stands man, representing the highest stage reached in the process of evolution.

As, in passing from cosmic to organic evolution, we saw the continued operation of the same uniform law, so, in crossing the boundary which divides organic from super-organic phenomena—the animal from the social world—we are able to trace the same unbroken process. The human races, like living organisms, are some of them in the ascending and some in the descending series. The latter we may for the present disregard, and contemplate society as, upon the whole, advancing. This advancement, like all forms of development below it, takes place differentially. It is, like the others, the mere resultant of slightly unequal impinging forces on all sides. Neglecting the lateral impacts which equilibrate each other, and considering only the constructive and destructive forces, we find that, while these are both in themselves enormous, the difference between them is very slight. In fact, so slight is it that it is not constantly in one direction. Even in periods of most rapid development, social progress takes place by rhythmical flows and ebbs. The latter prevail during parts of these periods, which implies that society at these times is losing ground—*i. e.*, that the destructive forces are actually part of the time in the ascendant. Except in a limited sense, presently to be considered, this is the nature of all the social progress which has taken place thus far.

Such is the general character of genetic phenomena and genetic progress in all departments of nature: the dynamic state is brought about through infinitesimal increments; the greater part of the force expended is neutralized in so nearly maintaining the statical condition; there is incessant rhythm, destroying at intervals most of the little that has been gained; the effect is in immediate contact with the cause, and exactly equal to it; there is no leverage or unequal advantage in the method of exerting influence, so that only the crudest and most direct results are capable of being reached. When correctly viewed, therefore, and thoroughly understood, the process of nature proves the least economic of all conceivable processes—a fact which the vastness of the scale on which it operates and the absolute magnitude of the results actually accomplished by it have in great measure concealed even from the most clear-sighted and thoughtful students of nature.

It was once supposed that nature's methods were the most economical ones conceivable, and constituted perfect patterns for men to copy from. It was while this view prevailed in all departments of science that "political economy" had its origin. Since that time biologists have abundantly demonstrated the error of this belief, and, had sociology been thoroughly grounded in biology, as Comte so justly insisted that it should be, it would have kept pace with the other sciences in rejecting this fundamental error. But this has not been the case, and we find social-science writers still lauding the stern economy of nature's laws. That economy, however, consists only in this: that, while nothing is done which does not secure some advantage, however slight, the amount of energy expended in producing such result need bear no proportion to the value of the result. Nature acts on the assumption that her resources are inexhaustible, and, while she never buys a wholly worthless article, she usually pays an extravagant price (vol. i, p. 521).

No system is maintained at greater expense than the reproductive; yet consider nature's prodigality in this. The octopus, in order to hold its own, must lay 50,000 eggs; a single sturgeon emitted 921,600 ova at one spawning, as counted by Dr. Buckland; the codfish produces 1,000,000 young fish each year, that two may survive and the species not become extinct; the oyster spawns 2,000,000 embryos in a season, if all of which could reach maturity, two or three individuals might supply the markets of the world. Professor Baird has estimated that an eel may contain at one time 9,000,000 eggs; a nematode was found to hold 60,000,000, and a tape-worm more than 1,000,000,000 ova. Similar facts confront us in the vegetable kingdom, but we need only mention that a single plant of the common mold (*Penicillium crustaceum*) was found to contain 3,200,000,000 spores.

The apparent peace which is supposed to reign in organic nature is highly illusory. Even the vegetation is at war, and the result of that strife is immensely to lower the possible standard of every living species of plant.* In the animal kingdom the struggle is desperate and unceasing, and the result is not different from that in the vegetable. Not only is the waste of reproductive power enormous in proportion to the amount of life brought forth, but, of the latter, by far the greater part meets with premature destruction. Animals, as all know, prey upon one another, producing universal and indescribable suffering, and placing every living thing in a state of chronic terror in the midst of its countless enemies. But even this tells less heavily upon the vital energies than does the silent conflict which results from the competition for the means of subsistence. It is here that occurs the greatest waste, if the cost of producing and developing an organism is counted at anything.

That the same laws have operated in the super-organic as in the organic world is quite obvious. Not only the progress out of barbarism into civilization, but the march of civilization itself, has been attended with the same incidents that characterize the development of a species or of an individual. The archæologist digs the remains of extinct civilizations out of the earth in much the same manner as the paleontologist does those of extinct animals and plants. Besides his wars with the elements and with wild beasts, man has been perpetually afflicted by wars with his own kind; and yet this warfare of men with their surroundings, with other species, and with one another, is the strict analogue of that of the lower forms of organized beings. Even the silent battle for subsistence has its counterpart in the competitive struggles of industry. The same wasteful methods prevail in society as in the animal and vegetable kingdoms. The natural resources of the earth are squandered with a wanton disregard of the future. The forests are cut down to supply temporary wants, consumed by escaping campfires, or purposely cleared for tillage, until the habitable portions of the earth are successively transformed into lifeless deserts. The soil is rapidly exhausted by the first occupants, who know only the immediate present. The wild animals useful to man are soon extinguished by the heartless destruction of the fertile females and helpless young. Population distributes itself to great disadvantage. Cities grow up with narrow, crooked streets, which must, from time to time, be widened and straightened at large absolute cost. Filth and disease-germs, due to dense, unregulated population, bring pestilence, and sweep away at rhythmic intervals the excess. Famines come to scale down the ranks of such as have forced their way in during years of plenty. Bitter partisanship prevails every-where throughout society, the nearly successful effort of each party being to undo what the other has done. Labor and capital, whose dependence upon each other is absolute, are constantly found in open hostility, which greatly reduces the productiveness of both. Exchange of products is largely carried on by redundant third parties, who, through no fault of their own, are allowed to absorb the largest share of the wealth produced. Trade consists to a large extent of unnecessary and duplicated transportation. Wealth is not only unequally but inequitably distributed. In short, all the functions of society are performed in a sort of chance way, which is precisely the reverse of economical, but wholly analogous to the natural processes of the lower organic world. Great results, it is true, are accomplished, even in society, by these unregulated forces, but they fall far short of what may be easily seen to be attainable; they are not the best. The optimistic view leads to stagnation by discouraging effort, while all true progress springs from that restless skepticism which dares even to question the methods of nature.

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* Some evidence on this point was presented by the writer in an article on "The Local Distribution of Plants," which appeared in "The Popular Science Monthly," vol. ix (October, 1876).

TELEOLOGICAL PHENOMENA.

Teleological phenomena are such as emanate from animate organisms endowed with feeling; and, as feeling is the initial step in the entire series of psychic phenomena, the domain of teleology is strictly co-extensive with the domain of mind. The basis of *action*, as distinguished from *motion*, or movement, is the existence of *desire* residing in the animate organism. Desire is also the only motive to action, but, although all action proceeds from desire, all desires are not followed by action. This, however, is always in consequence of a conflict of simultaneous desires involving for their satisfaction the performance of incompatible actions. Unless thus antagonized and equilibrated, every desire results in the action demanded for its satisfaction. As it is, the dominant desire produces action, which is vigorous in proportion to its degree of predominance. The idea involved in the term *volition* is not distinguishable from this conception of desire, except that it properly connotes this plurality of desires, and represents the effect of the dominant one in producing action. Actions which are the result of volitions are called *voluntary* actions, and therefore all proper action is essentially voluntary (*infra*, p. 319). The only exceptions to this would be such cases as involved no plurality and hence no conflict of desires, a simple impulse producing its simple action. This class seems to be strictly identical with what zoölogists call *reflex actions*.

Teleological phenomena are *consciously* produced. This follows from the truth stated in Chapter V. (vol. i, pp. 366, 386, 404), that feeling itself, even of the simplest character, implies consciousness to such an extent that to speak of unconscious sensibility involves a contradiction of terms. Even reflex action must, therefore, be regarded as both conscious and teleological.

Teleological phenomena involve *purpose*. This is scarcely more than the definition of teleology. It is as aiming at an *end* that the conception has come to receive this name (from τέλος, *an end*), and for which the German language, unlike our own, possesses an admirable vernacular equivalent, *Zweckmässigkeit*.

Every psychic action has for its *raison d'être* some object, or end, which the conscious organism desires to secure. It is proper to call this end the *cause* of the action, but, to distinguish this cause from such as consist in antecedent motions, and constitute impacts, resulting in genetic phenomena, already treated, and which are called *efficient causes* (*causæ efficientes*), this new class of causes, operating, as we may say, from in front instead of from behind, have long been appropriately termed *final causes* (*causæ finales*); although, as we saw in the INTRODUCTION (vol. i, p. 29), the teleological agent was an anthropomorphic creation of the human mind accustomed to observe its own teleological operations.

The ends constituting the motives of the action of conscious beings differ with the nature of those beings. The steps in the development of the psychic faculty, from the lowest creatures capable only of reflex action to the human being with his multiplied wants, have already been sufficiently traced in Chapter V. We are here chiefly concerned with the consideration of the nature of these ends, or purposes, of conscious beings, especially of human beings, with a view to their classification and their complete comprehension as factors in the problems of sociology.

We recognize at the outset that all teleological phenomena consist in *efforts* to attain the ends, or purposes, of the motor impulses. It by no means follows that, because the action is certain to result from the motive, the end is therefore certain of attainment. The only certainty is the *effort*. Some degree of success must, it is true, attend such efforts, to insure the preservation of the life of the creature, but, beyond this, failure may be the usual result. Any one who has long watched the movements of piscivorous birds, and observed the great preponderance of their failures over their successes in securing their prey, will appreciate the importance of distinguishing the *effort* from the *end*.

In the second place, it is not universally true that the action, if successful, will secure the end. The motive is universally a physical desire; the true end is, therefore, the satisfaction of that desire. The direct object of the action can only be an intermediate *means* to the end. But the mental operation required to determine that such object constitutes such means may be somewhat complicated, and, with the increasing degrees of complication in such operation, there will go increasing liability to failure in such determination. The birds that pecked at the grapes on the canvas of Zeuxis, and the ducks that swallowed the bits of red-hot iron from the blacksmith's anvil, are illustrations of such failure. But, outside of the influence of man, who so greatly modifies the environment of animals, there exist abundant examples which show that in a state of nature and in their normal habitat great want of correspondence exists,* and that animals *mistake* the true ends of their being. Upon this largely depends the power of certain species to entrap and destroy others, a process which can not be generically distinguished from man's successful efforts to accomplish the same end. Even plants, such as *Dionæa*, *Darlingtonia*, and *Sarracenia*, avail themselves of this liability on the part of insects to *err* respecting the proper manner of securing the safe gratification of their desires, and entrap them for their own nourishment. In man, whose desires are so multitudinous, and whose environment is so irregular and complex, such failures are of constant occurrence, and are specifically denominated "errors of judgment."

We see, therefore, that the actual attainment of the end of being is a complicated operation, and that in the approach toward it there is a series of distinct psychological steps. The actual satisfaction of a desire is complicated by a train of conditions which are liable to defeat it at any of the definite stages named. First, it must take its chances among conflicting desires, and must be the dominant one. Secondly, while, if it be the dominant desire it is sure to result in action, still, to secure the end, it must not fail in the effort, as it is constantly liable to do. Thirdly and finally, supposing it to secure the particular object at which it has aimed, it still runs the risk that that object when secured may not be adapted to satisfy the desire.

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* Spencer, "Psychology," vol. ii, p. 409.

Success, therefore, in securing the end of being is difficult and contingent. It will as a rule be proportional to the degree of complexity of the organism. It is greatest in the lowest organisms, whose actions are all reflex; it is least in man, whose actions are rational to a large extent, but whose environment is so enormously complicated.

METHODS OF CONATION.

Confining our attention for the future to the *effort* itself, we observe that all living organisms are incessantly *striving* to secure these ends of being. This universal *nisus* in the organic world extends to man, and constitutes one of the great factors in the problems of social science. The old philosophers occasionally caught a glimpse of it in their blind gropings after an explanation of the "will," and they named the supposed faculty of the mind which controlled voluntary action the "conative faculty" (from the Latin word *conari*, to endeavor). Later, Sir William Hamilton, feeling the need of a corresponding substântive, revived the cognate word which had been used by Seneca (*conatio*), and employed *conation* to designate the faculty itself. That such a term was needed, whether from the old or the new method of viewing human action, there can be no question; and, although perhaps not used since Hamilton, I gladly accept it as a contribution to the terminology of psychology, as well as of sociology.

In doing so, the term *conation* will be employed in this work to represent the efforts which organisms put forth in seeking the satisfaction of their desires, and the ends thus sought will be designated as the *ends of conation*. Although these specific ends are as multitudinous as the desires of organisms are numerous, they may all be regarded as belonging to one great class, since all desires are psychologically homogeneous. The general end of conation is therefore the satisfaction of desire. In animals this homogeneity of desires is very obvious, but in man, and especially in civilized man, so greatly do particular desires differ, that there are entire groups which are not popularly recognized by that name. Such, for example, are the motives proceeding from sympathy and from altruistic sentiments in general, while the inclination to act in conformity to any intellectual conviction or strong belief or opinion is not spoken of as a desire. Still, psychologically, all motives whatever are desires, and their satisfaction becomes an end of conation. In man, too, the satisfaction of desire in general, which in each particular case is attended with, or rather consists in, pleasure, acquires, in consequence of the highly derivative and greatly varied character of his desires, a distinctive name, not applicable to animals, and is called *happiness*. So far as the direct purposes of the sociologist are concerned, therefore, the ultimate end of conation is happiness.

Contemplating the phenomena of conation from a different point of view, we observe that they do not all proceed according to the same general method. Actions are capable of an important classification according to whether they are produced by the *direct* or the *indirect method of conation.* This distinction lies at the basis of social science. It is of little importance, however, to biology, since an examination of the actions of beings lower than man shows that, with very slight qualification, they are all performed according to the direct method. It is chiefly in human action that we are able to detect the employment of the indirect method. In man, however, there is no failure to employ the direct method, and hence it is in sociological phenomena alone that we are able to observe and study the operation of both methods, and to compare the results. To consider and point out this important distinction is our next task.

THE DIRECT METHOD OF CONATION.

The fundamental principle underlying the direct method of conation is, that the desires of sentient beings constitute true natural forces. This truth was set forth in Chapter VII (vol. i, pp. 458, 468, 486), and need not be here treated at length. It is important, however, to state clearly that this is not a convenient analogy or parallel, but a literal truth of science, and that, without any modification of its principles or definitions, the theorems of physics may be extended over the entire field of biology, provided they do not overstep the boundaries set by the above proposition as stated. For that which primarily marks the character of a true natural force is, that it obey the mechanical axioms of physics as established by Newton, and popularly known as the *laws of motion*. Yet it can be shown that desires as forces do obey these laws. Of the various manifestations of mechanical force, the conative forces most closely resemble those of gravitation or of magnetism. The comparison with the last-named form of force seems to present no discernible distinction. The object of desire is then the homologue of the magnet, the organism manifesting the desire representing the substance attracted by it. It is not pretended that in this there is identity, but only that the nature of the force is identical in as far as are the characteristics of any two forms of force.

The first of the laws of motion is, that it takes place in a straight line. Any one who has watched the actions of animals has observed that they obey this law. It is particularly noticeable of the lower organisms. Those having the power of flight exemplify it most completely, since in the air there are no perturbing forces. Insects are the best examples, and the vulgar expression, a "bee-line," simply sums up the universal experience of practical people as to the fidelity with which the bee conforms to Newton's first law. The experiments of Huber, Lubbock, and others, with bees and with ants, demonstrate that these psychically highest endowed invertebrates are restricted in their operations to the direct method of conation. In nearly all the higher grades of animals the same is practically true, and where exceptions occur, as in beasts of prey that employ arts, and other creatures that adopt devices of various kinds to escape the former, it is found that long subjection to conditions of environment rendering this necessary to existence has developed *instincts* according to the laws of adaptation, so as to relegate them to the class of direct actions. It is only in the highest forms of vertebrate life below man—as in dogs, and perhaps sparingly in horses, but quite notably in the elephant—that any unmistakable signs of higher psychic powers have been exhibited.

It would be easy also to show that in this psychic department of natural force the second mechanical maxim as to the amount and direction of changed motion is equally applicable. Locomotion in animals on the ground and over uneven surfaces presenting obstructions is as nearly straight toward the object of desire as the impinging forces will permit. A horse driven away from home will seek to return, and is only prevented from doing so by the rein. If it be across an open country without roads, and the rein is finally slackened, the animal will describe a curve under the influence of the two desires, viz., the fear of its master, whom it supposes to wish it to go from home, and the desire on its own part to return. Such an action is a normal case of "constrained motion," and the curve described may be compared with curves described by the celestial bodies, under the influence of two or more forces.

The third law of motion is, that action and reaction are equal. This is obeyed by direct psychic phenomena, and constitutes from the practical point of view their most important attribute. It is manifested in the fact that the results accomplished are equal to and no greater than the energy expended. There is no disproportion between the cause and the effect. There is none of the loss involved in genetic phenomena, but there is also none of the gain secured by indirect teleological phenomena. The organism can take no advantage of its surroundings, and can obtain nothing for which it does not pay a full equivalent in muscular energy.

There is, however, a form of advantage which muscle acquires over mechanical forces, and which is due to the organic economizing of molecular nerve activities, enabling them not only to transmit their energy to distant parts of the organism, but, in so doing, to take advantage of such mechanical principles as the lever and fulcrum, whereby the effect is rendered greater than the cause. This result is also accomplished through organization in still another way, viz., by the conversion of nerve energy into muscular movement. This involves some such principle of concentration as that on which atmospheric electricity is now held to be produced.* While muscular action may really have nothing in common with electrical discharge, the latter at least suggests an analogy which may aid in forming a conception of it. The essential difference between purely physical and even the lowest form of psychic phenomena consists in the power the latter possess through organization of producing effects both at a distance from, and of greater value than, the causes themselves; and, owing to the absolute correlation of will with purpose, and *vice versa*, this is really the fundamental distinction between genetic and teleological phenomena. But these organic mechanical appliances are themselves of genetic origin. They have been developed in conformity with the principles of adaptation, and the advantage which they secure is in no way of psychic origin. It can not, therefore, be compared with the advantage secured through the application of the indirect method, and it only serves to mark the manner in which the law of genetic evolution has operated, in rising by a series of well-defined steps from the crudest genetic to the highest intellectual achievements.

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* Electricity being a purely surface phenomenon, it resides in the outer surfaces of the minute aqueous globules which constitute vapor, or cloud. As these globules are solids, and as the solid contents of spheres increase much more rapidly than their superficial areas, the condensation of many of these minute globules into one larger one, as happens when rain-drops are formed, has the effect greatly to diminish the amount of surface, and, if this was fully charged with electricity prior to condensation, it would fail to contain it after condensation. The result must be an electrical discharge, of greater or less violence, to other objects.

As the necessary result of organization, the direct method involves the instantaneous exercise of muscular activity in the direction of securing the object of desire. If the object be near, the creature seizes it directly, and appropriates it. If the former resist the process, the latter simply exerts muscular force to overcome the resistance. If it be remote, by whatever sense detected, it moves in a right line to it. If barriers intervene, it either overcomes them by direct exertion, or, where they are incapable of being thus overcome, it expends its energy and comes to rest. In popular language, the operations of the direct method of conation constitute what is called "brute force," or mere "muscle," the crudest form of force as well as the least economical.

A large part of the operations of the human race, especially in its lower uncivilized stages, are conducted according to the direct method, and even in civilized races this method is largely employed. In this latter case it is important to observe that the adoption of this method is inversely proportional to the complexity of the phenomena which it is necessary to modify in order to secure the ends sought. Thus, while in the domain of simple mechanical forces and inorganic material objects this method is almost wholly eschewed, in the higher departments of vital and psychic phenomena it is the one most commonly employed. Without dwelling upon the intermediate steps, we need only consider the manner in which governments endeavor to enforce their decrees. The army and the *posse comitatus* are the truest examples of "brute force," the only way in which man has learned to influence the complicated phenomena of society. All laws, too, are coercive, whether mandatory or prohibitory.

Before leaving the subject of the direct method of conation, it may be further pointed out, as a fact not wholly distinct from that last stated, that, besides the mere muscular means of directly seeking the ends desired, there has been developed with the progress of mind a second means which may be distinguished as psychic. This consists in persuasion, exhortation, or appeal to dominant sentiments. As a psychic phenomenon, this persuasive or exhortatory method is a stage higher than the purely muscular one, but it is still direct. It seeks to arouse the emotions and thereby secure the performance of acts by others which the primary agent desires to have performed. The principal examples of this class of direct operations are to be found in the history of moral reforms and religious institutions, although in the latter case the indirect method has been largely employed. We also see excellent exemplifications of the psychic, or exhortatory, application of the direct method in modern philanthropic, charitable, and temperance reforms—all of which, like the moral progress of society, clearly demonstrate the relative impotence of the direct method of conation in accomplishing the ends of man and of society.

THE INDIRECT METHOD OF CONATION.

The second, or indirect, method by which conscious beings seek to attain desired ends involves an entirely new principle, and produces wholly different results. In the process of the development of the brain and the psychic faculties, a stage was ultimately reached at which the consciousness took on the attribute which enabled it to perceive a few of the general laws of phenomena, and thereby to predict from a given modification some of the secondary changes which would result. This is the simplest manifestation of the *intellectual* faculty, and it is this faculty that constitutes the new element required to form the transition from the direct to the indirect method. This transition constitutes one of the great leaps which nature has taken along its course of evolution, and the first break in that process since the development of protoplasm. Henceforth the possibilities of vital existence are to be multiplied, and the rate of organic progress enormously accelerated. For success in the sentient world is the ability to attain its ends, and the intellectual element is especially adapted to augmenting that power. By the direct method, action in this direction is restricted to cases which are within the muscular strength of the organism, and easily accessible without the intervention of obstacles. The utmost possible to be accomplished by it was measured by the energy actually expended. The least obstruction beyond the power of the individual to clear away by muscular force is an effectual bar to its access to the object of desire. By the aid of the new element all this is changed. Interposed barriers are evaded by circuitous routes of approach. Powerful natural forces are by appropriate adjustments made to do the work of overcoming resistance, and what is wholly unattainable in the present is, by the necessary adaptation, secured in the future.

The intellectual element, though commonly called a force, is not in reality such. It is not comparable with the other true psychic forces. These latter are obliged to do the real work that is performed, the same in the indirect as in the direct method. The intellect only guides them in such a manner as to secure the maximum results. It also brings other natural forces to their aid, and thus increases the effects. The general process by which all this is done is that of *invention*, the product is *art*, and therefore the faculty may be called the *inventive* faculty, and the phenomena produced *artificial* phenomena.

The one principle common to all forms of art and invention is that of causing natural forces themselves to do the work that man desires to have done. There are, however, many ways in which this principle may operate, in some of which the principle itself is somewhat difficult of detection. On the basis of these differences, the modes of invention, or the kinds of indirect action, admit of a rough classification. The largest groups in this classification are those that concern respectively the *amount* and the *direction* of force. In the former case, friendly forces are intensified and hostile ones diminished. In the latter, neutral forces, or even hostile ones, are turned to beneficial purposes, or the latter are rendered neutral. Where friendly forces are intensified, or any forces made useful or more useful than before, the invention is *positive*. Where hostile forces are either diminished or diverted, the invention is *negative*. To simplify the subject, we need consider only positive invention.

The principle of *intensification* is exemplified by the lever and fulcrum. As has been mathematically proved, this principle extends to embrace the inclined plane, the pulley, and the wheel and axle. This law, therefore, really underlies all strictly mechanical art.

The principle of *direction* is well illustrated in the simple art of irrigation which was practiced by the American aborigines in the Lower Status of Barbarism. The neutral force, which was carrying the mountain-torrent down to the sea, was, by a simple device, made to carry it to the fields of maize. The various means of securing a "head" of water to propel machinery constitute still more frequent examples.

There is a further law of *commutation* which has been extensively employed, and which may sometimes be brought under one and sometimes under the other of the general divisions above defined. Thus time is often commuted or converted into force, as in raising a pile-driver, intensity and consequent effect being secured, not by a mechanical principle, but by distribution of force over a greater interval of time. The reverse of this, or a negative principle, is seen in the phenomena of weights and springs to operate clockwork. Other subordinate laws might be noted, but a more minute analysis is not necessary.

The general principles underlying the application of the indirect method and their bearing upon social science have already been quite fully stated in Chapter VII (vol. i, pp. 476, 551), while specific examples will be given in Chapter XI (*infra*, p. 385). It will not, therefore, be necessary here either to repeat the former or to anticipate the latter. It is sufficient to have fixed the position of this most important of all the factors of social development in its proper place in a system of classification of phenomena.

Taking a retrospective glance over the entire field of phenomena thus far considered, we are able to perceive the several stages of progress in the direction of economy of results. The lowest stage in this, as in all other respects, is that of genetic phenomena, in which we saw how great was the waste and how exceedingly small the degree of progress as compared with the amount of energy expended. This is nature's method, pure and simple.

The next stage is that of the direct method of conation. Here the phenomena are teleological, and hence far more productive of results in proportion to the force exerted. The immense element of waste is eliminated. Action that is not equilibrated by attempting what is beyond the power of the agent results in accomplishing the same amount of work as is represented by the energy put forth, but no more. As in genetic phenomena we were dealing with true natural forces, so in those teleological phenomena which are accomplished by the direct method we are still dealing with true natural forces. The difference is, that while the genetic forces are physical the teleological forces are psychical.

Finally, we have as a third stage that in which the indirect method is applied, and here we see the maximum economy and the maximum efficiency in the accomplishment of results. With the development of this mode of action, great and increasing disproportion is secured between the energy expended and the work accomplished; space, time, and intervening obstacles are overcome, and the conditions are at length established for social evolution.

CLASSIFICATION INTO NATURAL AND ARTIFICIAL.

The system of classification above sketched is based primarily upon the fundamental distinction of genetic and teleological phenomena, this being the most important basis from which to contemplate the successive steps in the progress toward the final stage represented by the application of the indirect method. But the reader can not have failed to perceive that there is another scarcely less fundamental distinction, furnishing a second basis of classification too essential to be overlooked. This is the distinction of *natural* and *artificial*. It is clear, too, that this classification will overlap the former, so as to place a larger share of all phenomena under the first of these general groups than fell under the group of genetic phenomena, while restricting the second of its great groups to a much narrower field than that occupied by teleological phenomena. A closer inspection shows that this transfer consists in relegating from the department of teleological phenomena to that of artificial phenomena the entire domain of the direct method of conation.

We saw that all actions performed according to the direct method agree with genetic phenomena in obeying the mechanical axioms, or primary laws of motion. The phenomena of this group must therefore take place through the action of true natural forces; and hence the domain of natural forces, besides embracing the department of genetic phenomena, must also extend over so much of the field of teleological phenomena as falls within the operation of the direct method. This being the case, the domain of artificial phenomena, excluding as it must all genetic and all direct teleological phenomena, is so narrowed down as to coincide in all respects with that of indirect teleological phenomena alone.

The importance of the great extent of the domain of natural phenomena may be better appreciated when we remember that it constitutes the legitimate field for the exercise of the inventive faculty, and that every-where within it such phenomena are susceptible to modification and capable of being rendered advantageous to man in proportion as their laws are comprehended. But more especially does this truth concern the sociologist, since he finds in it the very hope of social science. He learns that within that great group of phenomena subject to human control, and under the subordinate head of direct teleological phenomena, stand the phenomena which result from the operation of the *social forces* (vol. i, p. 468), and in this fact resides the entire possibility of an artificial social progress.

Genetic changes take place through infinitesimal increments, and are secularly slow, all but a mere differential of energy being lost in equilibration. Vital phenomena belong to the genetic class. Sense phenomena are teleological but direct, thus securing no mechanical advantage above that which the organism itself has secured through its structural development. Intellectual phenomena, also teleological, alone secure this advantage, and it is this which distinguishes all forms of *art* and constitutes such actions *artificial*. While many such actions are doubtless performed by the highest mammals, it requires a close discrimination to distinguish them from *instinct*. Instinct may not inappropriately be called *secondary organization*, since it secures, through purely genetic methods, such cumulative adaptations as are secured by morphological organization, whereby certain mechanical advantages are gained, so long as the creature restricts itself to the constantly recurring influences of a circumscribed habitat, but which are as inoperative outside of that habitat as are the physiological processes outside of the organism. Instinct, therefore, may be said to stand to the indirect method in the same relation that the physiological apparatus of living organisms stands to the direct method. Just as the latter are purely genetic products, attended with effects that appear to be psychic, so the former is an equally pure genetic product, attended with effects that appear to be intellectual. And it is with greatly heightened interest that we now observe that instinct forms still another of those abrupt steps, strictly analogous to that marked by cell-contraction in muscles and leverage in tendons and joints, to relieve the too wide interval between the phenomena of the direct and those of the indirect method of conation.

Recapitulation.—Briefly to recapitulate the entire subject of the classification of phenomena, we find that they may be primarily divided into the two great classes, genetic and teleological, the first of which are always physical and unconscious, and produce change through infinitesimal increments, while the second are always psychical and conscious, proceeding from volition and involving purpose. Looking to genetic phenomena, we find that they are subdivided into two groups—inorganic, the result of physical, or mechanical, forces, and organic, the result of vital, or biological, forces. Looking to teleological phenomena, we find that they, too, belong to two general subdivisions—direct, proceeding according to the direct method of conation, and indirect, proceeding according to the indirect method of conation. Direct teleological phenomena are susceptible of a secondary subdivision—convenient for the sociologist but not fundamental—into such as are manifested in the animal world below man (zoölogical), and such as constitute human action (anthropological). This last sub-group is the domain of the social forces.

Regarding this as the primary classification of phenomena, we may next take account of the scarcely less important secondary classification into *natural* and *artificial*. Natural phenomena include all genetic phenomena, and direct teleological phenomena in addition. Artificial phenomena coincide and are strictly identical with indirect teleological phenomena. All natural phenomena take place according to uniform laws, obey the mechanical axioms, are impelled by true natural forces. They are capable, therefore, of being investigated, their results may be predicted, and the phenomena themselves may be modified at the will of rational beings who have made themselves acquainted with the laws which underlie them. Artificial phenomena are those that result from such modification and control of natural phenomena by such rational beings. The transformations effected upon the globe by man—which, without his rational actions, would not have taken place, and which may be designated in general phrase as due to the agencies of civilization—consist principally of such artificial phenomena.

The following tabular exhibit will aid the reader in fixing the relations of these several groups, while at the same time it combines in a single scheme both the bases of classification that have been employed:

Phenomena are:

Genetic; physical; unconscious: producing change through infinitesimal increments.
Teleological; psychical; conscious: proceeding from volition and involving purpose.

Inorganic: the result of physical, or mechanical, forces.
Organic: the result of vital, or biological, forces.
Direct: proceeding according to the direct method of conation.
Indirect: proceeding according to the indirect method of conation.

Zoölogical: as manifested by creatures below man.
Anthropological: as manifested by man. Domain of the social forces.

Natural: taking place according to uniform laws, and produced by true natural forces; capable of prediction and modification.
Artificial: consisting of natural phenomena modified by the inventive faculty.

Statement of the Argument.

The purpose of the present chapter, as already announced, has been to accomplish the complete orientation of the reader for the voyage before him. Without this, much that is to come might appear meaningless, or at least lose its point.

Men think in systems. Most systematic treatises are unintelligible unless followed from the beginning and grasped in their entirety. A fundamental tone runs through them which prescribes the special sense of every line, and which is wholly unheard in isolated passages. The careful reader of such works, without necessarily acquiescing in the author's views, is able at least to comprehend them and to do justice to them.

It was thought that the considerations set forth in this chapter might aid in thus elucidating the general point of view from which this work is written, and enable the reader who shall persevere to the end to supply, from what he may thus learn of the ideas which the writer designs to convey, some of the deficiencies in the discussions which are to follow. There is a tendency—to which, I presume, all will confess—to allow the reader's individuality to crowd out that of the writer, and thus so far to mingle the subjective with the objective as to leave the latter imperfectly assimilated. For the reader's own good, this tendency should be restrained. We only enlarge our own conceptions by admitting those of others, not necessarily in the sense of accepting them, but simply of appreciating them.

In the following argument, now to be briefly stated, and subsequently to be fully elaborated, the statements made in this chapter, as well as those contained in the preceding volume, are to be taken as the basis, or premises, and must be granted "for the sake of the argument" at least, however unsound they may be deemed in themselves.

DEFINITIONS.

The remainder of this work will chiefly consist in the discussion of six terms, and therefore, before entering upon such discussion, it is a primary necessity to furnish rigid definitions of each of these terms.

For a purpose which will presently appear we will assign to each of these terms a letter, which will fix their order in a series not admitting of any alteration.

The first of these terms, which we will designate by the letter A, is *Happiness;* the second, which we will designate by B, is *Progress;* the third, which we will designate by C, is *Dynamic Action;* the fourth, which we will designate by D, is *Dynamic Opinion;* the fifth, which we will designate by E, is *Knowledge;* and the sixth, which we will designate by F, is *Education.*

The definitions of these six terms are as follows:

A. Happiness. Excess of pleasure, or enjoyment, over pain, or discomfort.

B. Progress. Success in harmonizing natural phenomena with human advantage.

C. Dynamic Action. Employment of the intellectual, inventive, or indirect method of conation.

D. Dynamic Opinion. Correct views of the relations of man to the universe.

E. Knowledge. Acquaintance with the environment.

F. Education. Universal distribution of extant knowledge.

THEOREMS OF DYNAMIC SOCIOLOGY.

Corresponding to these six terms thus defined, there are six theorems of dynamic sociology which require to be elaborated and established, and to each of which a separate chapter will be devoted.

Continuing the literal designations, these theorems are the following:

A. Happiness is the ultimate end of conation.

B. Progress is the direct means to Happiness; it is, therefore, the first proximate end of conation, or primary means to the ultimate end.

C. Dynamic Action is the direct means to Progress; it is, therefore, the second proximate end of conation, or secondary means to the ultimate end.

D. Dynamic Opinion is the direct means to Dynamic Action; it is, therefore, the third proximate end of conation, or tertiary means to the ultimate end.

E. Knowledge is the direct means to Dynamic Opinion; it is, therefore, the fourth proximate end of conation, or fourth means to the ultimate end.

F. Education is the direct means to Knowledge; it is, therefore, the fifth proximate end of conation, and is the fifth and initial means to the ultimate end.

Letting the symbols alone stand for the terms, and employing the mathematical sign of equivalence ($\asymp$), to be read "will result in," the above propositions may be condensed into a very simple notation, which at the same time presents the entire argument in a perfectly clear and intelligible form:

A. The ultimate end.
$B \asymp A$.
$C \asymp B \asymp A$.
$D \asymp C \asymp B \asymp A$.
$E \asymp D \asymp C \asymp B \asymp A$.
$F \asymp E \asymp D \asymp C \asymp B \asymp A$.

The special claim which is made for this scheme is that of *completeness*. It is proposed to show that not only have we in the first term the absolutely *ultimate end* incapable of serving as a means to any ulterior end, but that in the last term we have the absolutely *initial means* incapable of being made an end to any anterior means.

It will be further shown that the several proximate ends constitute true means for securing the next respective higher ends, and therefore need not be pursued as ends in themselves, so that the entire series above the initial means may be safely left to take care of itself, and the total social energy be concentrated on the initial means; that all power expended on any of these proximate ends is lost so long as any power can be laid out on a more remote one; and that success, for the same energy expended, will be proportional to the remoteness of the end toward which it is directed, so that the highest economy is only secured in directing it to the most remote proximate end, which is the initial means.

But we will not here further anticipate the treatment of the main problem.

CHAPTER IX.

UTILITY.

HAPPINESS THE ULTIMATE END OF CONATION.

Nature and genesis of feeling—The object of nature, function; objective, or biological, point of view—The object of sentient beings, pleasure; subjective, or sociological, point of view—The indirect, or intellectual, contrasted with the direct, or physical, method of conation—Utilitarianism—The various alleged ends of conation shown to be merely means to the ultimate end, happiness—Right and wrong—Imperfection of the codes of law and ethics—Objections to the word happiness—Relativity of pleasure and pain—Increase of feeling with the degree of organization—The pursuit of happiness—Organization of happiness.

At the base of every philosophical system involving the interests of man lie the phenomena of *feeling*. These phenomena constitute the *substratum* of Sociology. They likewise form an important factor in Biology. Impossible though it may be to find a line which shall absolutely and in all cases divide the vegetable from the animal kingdom, it is nevertheless true that, for all forms to any extent differentiated, the possession or non-possession of feeling is the distinguishing mark of these two departments of biology. For all the practical purposes of a philosophy, the phenomena of life may be classed under the one or the other of the two general heads, the *insentient* and the *sentient*. The transition from the former to the latter, in the progress of the evolution and organization of matter, constitutes one of those strides, or leaps, which nature occasionally makes, and which serve to mark off the eras in the history of development.

Life without feeling is essentially *passive*, and its capabilities are limited by the nature of surrounding circumstances. Life with feeling becomes *active*, and either directly or indirectly reacts upon the environment, modifying the face of nature.

The natural genesis of feeling is one of the most interesting of biological problems. Not that, as a scientific question, it admits of a certain solution, but, as one of those historical questions thrust upon us by the facts of biology, while it transcends the limits of observation, it can not be excluded from the domain of rational inquiry. Like many other kindred questions, that of the origin of feeling seems to find its most satisfactory solution in the great and newly discovered law of selection, or adaptation. Though to a certain degree relative, the phenomena of feeling may be resolved into two great groups, each mutually excluding the other, in one of which all the feelings are more or less pleasurable, while in the other they are more or less painful. So-called indifferent feelings* (vol. i, p. 386), can not be admitted except into the department of psychology proper, where, as the correlates of perception, they are denominated sensations.

Pleasure and pain, then, are the leading characteristics of all feelings. Teleologists have essayed numerous explanations of pleasure and pain, particularly of the latter, one of the chief of which is that pain is given us as a discipline, in order to improve our morals or increase our reverence for the Creator. But, of course, this would not apply to the lower animals which suffer like ourselves, and the same objection would apply to all the attempts made by that school to account for the existence of pleasure and pain. They rarely condescend to take such humble creatures as animals into their lofty consideration. When Descartes was met by this insuperable obstacle, his native candor and logical consistency drove him to the worst vagary of his life—that of insisting that all animals were mere *automata*, and devoid of feeling.

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* Spencer, "Principles of Psychology," vol. i, pp. 272, 474.

When the principle of natural adaptation, or selection, is once fairly understood and applied to the phenomena of feeling, they prove one of the easiest classes of facts in the whole range of biological science to yield to its magic touch.* The child shuns the fire and the heated oven, and everybody recognizes that its fear of the pain which attends burning is what frequently preserves its life. It is impossible not to admit that even man, were he absolutely indifferent to pain caused by violent contusions, etc., would be liable to be destroyed in thousands of cases where this attribute now protects and preserves him. If such is the case with children surrounded and protected by rational parents and friends, how much more potent must this principle be in the protection and preservation of non-rational animals!

It is not the abstract love of life, the mere desire to live, which causes the hare to flee the hound, or the partridge to cover from the falcon. It is primarily the dread of the pain which experience teaches would be inflicted by the teeth of the one and the talons of the other. And so it is throughout the sentient world. The dread of pain is the spur to all those activities which really result in the preservation of life. And see how these facts are correlated. It seems a truism to say that death is the necessary consequence of high degrees of suffering. But there is really no logical connection between them. Until we understand the bearing of this new-found law of survival, there is absolutely no adequate explanation of this correlation—no *a priori* ground for assuming its existence; and it is only because we habitually observe the facts, that such a connection between them as that of cause and effect should be established in our minds. The case is analogous to that of gravitation. It seems absurd to speak of a body moving upward, *i. e.*, away from the earth, when left to itself, simply because of universal experience. The laws of thought are wholly unaffected by it, as is proved by numerous experiments. So there could be no logical inconsistency in the association of the highest degrees of suffering with the longest duration of life, and only experience negatives such a supposition. Indeed, the religionists have fallen back on pure logic whenever, thinking no corporeal punishment sufficiently severe, *i. e.*, realizing that death would certainly supervene before the requisite amount of pain could be inflicted, they have invented places of *eternal* torment for the soul, where death no longer comes forward as a check upon suffering. But, when the law of survival is once clearly conceived, it introduces an adequate mechanical cause for the relation of sequence between pain and death.

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* *Loc. cit.*, pp. 279, 280.

Imagine the world peopled by myriads of living and active beings of all kinds and forms of diversity. They are all in contact with all the other objects existing about them, and a prey to all the vicissitudes which a constantly changing world presents. Without feeling, they must be without sense or intimation of danger, and rapidly, through frequent exposure to those agencies which destroy their organization, they would, one by one, disappear before the adverse elements that every-where surround them. The utter extinction of every form under these circumstances could be but a question of time, and all actual life would vanish from the globe. But let us suppose some to be slightly endowed with the susceptibility to pain. These would, in proportionate degrees, shun the agencies calculated to destroy their organization, because such would also be, on the hypothesis, the ones which would produce pain. The forms thus endowed would, therefore, survive longer in proportion to the degree of sensitiveness to pain. Thus, under the now clearly understood law of "natural selection," the number of sentient beings would increase, while the insentient ones would become extinct, and we should have the world substantially as we actually see it. So that, on the irrational assumption of a simultaneous creation of living things in all respects as they are, except in the total absence of feeling, if a degree of sensitiveness, however small, be assumed once to make its appearance, accidentally or otherwise, the complete development of a sentient kingdom of beings out of such a state of things is perfectly explicable on the single principle of natural selection, or the preservation of the best adapted. That such has not been the manner in which sentient beings have originated, needs not, of course, be said; but, be that mode what it may, it is the same principle to which we must look for the only explanation that nature affords of the existence of pain in the world.

Not less clear is the genesis of the opposite state of feeling, viz., *pleasure*. Indeed, a closer view makes it probable that the existence of pleasurable sensations was even more necessary than that of painful ones, in order to insure the preservation of living beings; and only in consequence of their relativity is the presumption excluded of the chronological priority of this class of feeling. For active life can only be maintained by the absorption of nutriment, and this nutriment, for every thing higher than the crinoid, must be sought and obtained by the exercise of a greater or less degree of individual effort. But no such effort will be put forth without a definite stimulus in this direction, and the only such stimulus possible is the pleasure of gratifying desire. We have no right to doubt that the amœba experiences a positive pleasure in ingulfing a diatom, although there may be room to question whether the bisection of its body produces any positive pain. As we ascend in the scale of being, we find that, so far as we can judge, the capacity for pleasure increases *pari passu* with increase of structure. It may not be true that the pleasure of taking in nourishment is intensified in the precise proportion of organization, yet this is an approximation to the truth. Compare, for example, the sense of taste in the oyster with that of the epicure.

But, as organization increases, other capacities for pleasure arise, many of which are as essential to the continuation of life as are those connected with nutrition. There is the great co-ordinate system, the reproductive, which, while in the lowest creatures it seems to be little more than a sort of supplementary nutrition, becomes in higher organisms differentiated into a wholly distinct function, having its own special organs located in a different part of the body, and a nervous organization yielding the strongest of all stimuli in the intense pleasure of its exercise. While the nutritive system has for its function the preservation of the individual, the reproductive system has for its function the preservation of the species. The one preserves life, the other perpetuates it, and, in so far as two indispensable things admit of a comparison, the latter is far the more important function. And here, more distinctly than in the case of the nutritive system, the capacity for pleasure advances with the grade of development. It is a significant fact, just at this point to be noted, that it is not until we reach the higher vertebrates, the mammalian class, that we find the highly specialized male intromittent organ. The perpetuation of these highly organized beings demanded a powerful stimulus to the performance of the reproductive act, and nature has supplied such a stimulus in the development of special organs of copulation with an attendant nervous apparatus.

In higher creatures there are various other sources of pleasure, the attainment of which is more or less essential to the life and health of the organism. Play itself, as exemplified by the gambols of the lamb or the colt, is simply the gratification of the natural demand of the animal system for its necessary exercise. Both classes of feeling are easily accounted for as the result of natural adaptation. Plants, in so far as they are devoid of feeling, exist by virtue of other means of protection. Feeling, so far as nature's objects can be understood, is simply one of the means by which organisms are protected and enabled to subsist. The classes of beings possessing it obviously could not exist without it; that is to say, the existence of a class of beings possessing the organization and all the characteristics of existing sentient creatures, except the capacity for pleasure and pain, would, under the same external conditions, be utterly impossible. Remove feeling, and some other adequate protection would require to be substituted, and no other can be imagined that would not necessitate a complete change of organization and its re-adaptation to conditions, equally marked with that which distinguishes the plant from the animal. Remove the pleasure derived from eating, the gustatory nerves, and the individual immediately perishes. Remove the sexual appetite, and the race forthwith becomes extinct. Remove the stimulus to muscular exertion, and the organism languishes, and sooner or later the species must succumb. On the other hand, let the so-called "pangs of hunger" be quieted without the normal absorption of nourishment, and death from starvation, though it be painless, would be no less certain. Suppose all discomfort arising from prolonged sexual abstinence to be removed, and not even civilized man, with all his foresight, could arrest the speedy extinction of his own race. Even *ennui** has its uses. It is equivalent to the pain resulting from want of normal exercise of the faculties of the whole system. Remove it entirely, and a fatal lethargy would paralyze the sentient world. So indispensable are all the forms of feeling.

It would be easy to show that the existence of feeling—of pleasure and pain—is the special quality which admits of the highest forms of organization being attained. Far safer than woody tissue, calcareous shells, or bony plates, are the sensitive tentacles, antennæ, vibrissæ, and papillæ of highly organized animals. And greater still is the protection which the eye and the ear afford to the creature in the midst of dangers. But in proportion as these safeguards exist, will the degree of organization increase. Untrammeled by clumsy coats of mail, the tissues are free to expand, to differentiate, to improve. With the means of escaping all the rude assaults from without, the organism substitutes delicacy for strength, and structural refinement for coarse offensive and defensive appliances. So that the sentient faculty is not only necessary to the existence of highly organized creatures, but higher organization is the chief result of the development of the sentient faculty. The progress of one is the progress of both.

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* G. Leroy, "Lettres sur les animaux," pp. 37, 143; Auguste Comte, "Philosophie Positive," vol. iii, pp. 525, 526, 548; vol. iv, pp. 449, 450; Carpenter, "Mental Physiology," p. 175.

The genesis of feeling is thus satisfactorily explained, and in it, as a corollary, or rather as the obverse side of it, is clearly seen also the genesis of sentient life itself. The only unsolved problem is that of the nature of feeling. For the questions still remain: How should such an expedient have happened to be hit upon as the endowment of organized matter with sensation? and, What is it in sentient matter that distinguishes it from insentient (vol. i, p. 363)? To say that nervous matter possesses this property, only brings us one step nearer to the problem. It is little more than a statement of the problem. We will not hastily place this in the category of the unknowable, but will cheerfully leave it for the present in that of the unknown, while with true positivist resignation we will accept the immense fact which feeling itself (our senses) presents in the existence of feeling in the world.

In dealing with the genesis of any class of phenomena we must necessarily keep in view the end, or purpose, to be served by the phenomena. With this truth teleology has nothing whatever to do. We have only to recognize that nothing can exist without a cause, and we are obliged to regard the effect in the light of an end, or purpose. Therefore, without recognizing any influences external to the positively dependent course of natural change, we are compelled to take account of what must be regarded as the objects, or ends, of nature. Language forces us to express the conception by these symbols, and the laws of thought require us to formulate such a conception before we can comprehend the operations of natural law. The chief objects of nature are three: the preservation, the perpetuation, and the improvement of organized beings. By preservation is meant the maintenance of the life of the individual as long as the conditions of existence will admit. Perpetuation is the origination of new individuals, which shall continue the life once evolved and transmit it to future generations. By improvement is meant progress in the quality of the organization—development.

The first two of these objects of nature meet at a point far down in the scale of existence, where, in the reproduction of cells by simple division, the continued process of nutrition is distinctly traceable (vol. i, p. 328). In the end, too, they are identical, and may both be reduced to the one result—preservation—just as they can be reduced to one physiological process — nutrition. Convenience, however, demands that they be considered separately, as in the higher forms of life no functions seem more widely divergent than the nutritive and the reproductive.

The last-named object of nature, the improvement of life, differs from the others in not being absolutely necessary. An organism may continue to exist, though it be actually degenerating, and the quality of its organization be diminishing. And yet, when more closely viewed, this is true only within limits. Let the degeneration continue long enough, and it will ultimately reach the limit which divides organic from inorganic matter. Continued deterioration is equivalent to ultimate extinction. Cessation of any of the three great functions, therefore, leads eventually to the same result. Let nutrition be suspended, and death follows immediately, *i. e.*, in a few hours or days. Let reproduction cease, and life only continues during the survival of the individual—a much longer time, however. Let development cease, and life may be continued a still longer period, and, could we imagine the state of organization to remain exactly the same, it might be prolonged indefinitely. But such an assumption is practically impossible, and, since we suppose that it never rises above the given point, this is equivalent to a certain degree of decadence, however small. In fact, all organic development is more or less rhythmical, and, unless a given organism is on the whole rising, it is pretty certain that it is declining. Every form is either on its way to a higher life, or else it is on its way to extinction. And, after all, there is no new element in this process of development. It is nothing more than the continuation of the original formative impulse that first brought life into the world. To say that the tendency to progress is a general one, and properly belongs to the objects of nature, is only to say that in the present, as in the past, the great organizing force, or *nisus*, is at work, as well on the creatures already possessing considerable organization as on those in process of origination.

This point of view, from which we have been contemplating the phenomena of organic life, and which takes account of what have been called the objects of nature (vol. i, pp. 461, 601, 664), may be designated as the *objective* point of view. It is the stand-point of biology, and affords the natural conditions for the successful investigation of the laws of life, not only of the lower organisms, but of the human race as well.

But there is another point of view from which the same class of phenomena may be regarded, which we will distinguish as the *subjective*, since it constitutes the stand-point from which sentient creatures themselves must be conceived as contemplating the phenomena of feeling, and that from which man intuitively contemplates them, though rationally he certainly does also consider the objects attained by them. We have seen that the objects which nature must be regarded as aiming to accomplish by the introduction of pleasure and pain are the preservation, perpetuation, and improvement of sentient organisms. Pleasure and pain are merely the means to these several ends, all of which are more or less remote in appearance from the means employed. As already shown, there is no necessary connection between a given pleasurable or painful sensation, and the result it accomplishes in preserving, perpetuating, or perfecting the organism experiencing it. This result is brought about through a kind of pre-established harmony, not indeed of a supernatural kind, but consisting, on the contrary, of a purely mechanical adaptation of the means to the end, which are connected by the highest causal necessity, yet in such a manner that the creature obeying the mandate of the former does so without the least necessary conception or even knowledge of the latter. It is only after the reason has become so far developed that the dependence of the one upon the other can be deduced from the facts of observation, that the beings themselves are able to contemplate the results as the consequences of the means adopted considered as antecedents. This condition differs according to the obviousness of the dependence, but is scarcely at all reached by any creatures below man, and is only completely attained by the highest intellectual types of mankind. And even here the consideration of the ends alone would prove wholly inadequate to secure the general adoption of the means were the spur of pleasure and pain removed, while, *a fortiori*, none of the objects of nature could ever be secured to the lower, or irrational, creatures in the absence of these stimuli (vol. i. pp. 469, 602).

The point of view, therefore, from which the subject itself contemplates these phenomena, is one which converts the means of nature into the ends of the creature. In short, the creature ignores these ends of nature, and looks no further than the phenomena of feeling alone. According to the same general law of selection, by which plants are so differentiated as to prevent self- and secure cross-fertilization, and by which other remarkable adaptations have been brought about in both the great kingdoms of life, this greatest of all adaptations has been effected, whereby sentient existence has been made possible, and the paramount ends of life are accomplished through the simple efforts of the organism to obtain pleasure and avoid pain, blindly heedless of all consequences. Not even the contemplation of the myriad forms that must have been sacrificed to secure such an adaptation can deprive us of our admiration of so perfect a scheme!

Wide as is the generalization that all the activities of the organic world have for their sole object the attainment of pleasure and the avoidance of pain, this is nevertheless the conclusion to which a final analysis brings us, and neither the rules of logic nor the facts of experience will permit us to except from this universal truth the actions, or any one class of actions, performed by mankind or any portion of mankind. The effort to do this—actuated chiefly by a false pride which blinds men both to fact and reason—is the bane of philosophy both past and current, corrupting, as it does, its very sources, and profoundly vitiating every stage of its growth.

Let us recognize this truth, patent to the unbiased mind, and, so doing, let us see to what conclusions it leads us, regardless of the nature of these conclusions.

As will be readily perceived, such a recognition will involve a complete change of base of all philosophy. We are now compelled to place ourselves on the stand-point of the developing organism, and to limit our view to the simple ends of the creature. Instead of any longer soaring aloft to contemplate Nature in her remote objects and looking down upon the universe of life as a vast objective panorama rolling on below us, we are obliged to cling to earth with all its crude mechanical devices, repugnant though they be, and take our places in the ranks of Nature's living army, to contemplate life as a mass of real phenomena, and ourselves and our own actions as an integral part of phenomena.

Having resigned ourselves to such a condition, the first great truth that soon begins to dawn upon us is the one already hinted at, that the phenomena of feeling constitute the true basis of all that part of philosophy which at all involves the interest of man. They are, in short, the foundation stones of the social science. What function is to biology, feeling is to sociology.

As has already been remarked, there must be some object in philosophy. The day of intellectual gymnastics for its own sake has gone by. To-day men think for a purpose. That purpose is one—the elevation of man. This is the same object that has built up every system of religion, the same that is avowed by the advocates of every form of government. The subjective point of view is the only one from which this purpose can be accomplished. The recognition of feeling as an end is the state of mind necessary to be assumed before any progress in social philosophy can be made.

We have already seen that mind has two sides, an obverse and a reverse. The one begins with sensation and ends with sentiment; the other begins with perception and ends with reason. The one constitutes the feelings, the other the intellect (vol. i, p. 381). The tendency in all ages has been to ignore the former of these great divisions of the mind, which is essentially the primary one; or, if recognizing it at all, to sublimate it into an intangible something called the will, which no two philosophers could agree in defining, and no one succeed in comprehending; while, at the same time, the glories of the intellect have been unduly extolled, and the impression created that mind consists solely of intellect and will. Few philosophers have condescended to take notice of the desires, the passions, the emotions, and the sensibilities, while so-called "faculties" of the mind have been multiplied and heaped up by writers on "intellectual philosophy," and volumes written about the nature of "consciousness." The dependence of all these "faculties" upon the primary phenomena of sensation is sufficient to show the necessity of first fully understanding the phenomena; and the almost total failure to treat of them, or their brief and superficial treatment in the form of mere appendices to the treatises of which they should have formed the basis, abundantly explains the complete decline of metaphysics and the demand for a thorough reorganization of the philosophy of mind (Chapter V). We are not, however, here concerned with this reorganization, which is certainly progressing favorably, except in so far as regards the position which the feelings should occupy in the practical questions connected with the social and individual actions of men. In psychological systems we care little what position they are made to occupy, but in sociology it becomes of the utmost importance that they should be fully recognized as the true ends and final objects of human action.

Ignoring for the present the negative means of nature (pain), and confining our attention to the positive means (pleasure), it is not difficult to perceive that it has many and varied forms. Besides the simple and direct pleasures derived from the nutritive and reproductive acts and from exercise of the body, as we rise in the scale of being not only does each of these kinds of pleasure expand, ramify, and become compound and complex, but a vast number of new pleasures arise, having their sources in the highest and purest sentiments, and a physical seat within the body which it is difficult or impossible to locate with precision.

Considering, first, the expansions which the primary pleasures undergo as organization increases, we observe that they are least marked in the nutritive system. And yet when we compare the lowest creatures, which absorb nourishment by the mere vortices that the movement of their cilia makes in the water in which they live, with the higher vertebrates, possessing elaborate gustatory and alimentary systems, we can not doubt that the latter must derive a much higher satisfaction from the nutritive act than do the former. A closer comparison of the gustatory pleasures in man and in the lower animals shows a further increase, while between different classes of men the contrast is still greater. In the latter case, it has been brought about chiefly through artificial means devised by human ingenuity. The introduction of cookery and its ample development and refinement have given him the means of vastly increasing the pleasure-giving power of the various nutritious substances, while the faculty itself has, by adaptation to this superior diet, become capable of appreciating these improvements in progressively increasing degrees. To all the multitudinous kinds of prepared food, the meats, soups, ragouts, condiments, pastry, confections, etc., must be added the many delicious beverages, including fermented liquors, which, whatever their physiological position or moral influence, are among the highest contributions to the stock of human pleasures, and must therefore enter into the enumeration of the objects of gustatory enjoyment. Corresponding to all these objects there arise acquired tastes, differing in different individuals, but strong in all, serving to intensify the general sum of the pleasures of nutrition. The importance of these pleasures as motives to human action can not be overestimated, and must not be belittled by the sociologist. Not only are they the chief objects of the life of the great mass of humanity whose monotonous toil is scarcely relieved except by varying their quality, but their power is equally great over the higher classes, especially the unintellectual wealthy, who lavish vast sums upon the gratification of their uncurbed appetites; while every one knows that the skillful lobbyist can turn the whole tide of the legislation of great states by the magic spell of well-managed dinners and sumptuous banquets.

Considering, next, the pleasures connected with the reproductive function, we have already seen how great the step was from the non-mammalian vertebrates to the *mammalia*. Not only are the pleasure-yielding surfaces of the sexual organs greatly increased and the local adaptations perfected, but the entire lacteal system, which is developed for this purpose in both sexes and supplied with special nerves, is the seat of emotions of the most powerful kind, resulting in the love of offspring and other influential stimuli. In the higher types of man, particularly among monogamous races, this system becomes especially differentiated and culminates in the absorbing emotion of love, which has formed the theme of innumerable poems and romances, flooding the world with a literature of its own. And, not content with the satisfaction afforded by literary productions, the civilized world has demanded more vivid representations of the phenomena which flow from this sentiment, and thus we see throngs in every large city nightly flocking to those places where dramatized realizations of its operations can be seen, and deeper draughts of its mysterious spirit be drank in. Corresponding to this outer demonstration, there exist throughout the most advanced societies those countless real romances, unwritten, unsung, and unrepresented, which throw a beautiful and irresistible charm over human life.

We see, therefore, that this sentiment, with all its belongings and in all its ramifications and relations, constitutes, next to the one last considered, the most powerful stimulus to action that human nature possesses; indeed, were it otherwise, the ends of nature would have failed of attainment.

Certain philosophers, and notably M. Auguste Comte, have recognized in the sentiment of *ennui* * one of the prime factors of organic development and social evolution. As this sentiment is but the negative side of a great biological truth, it seems a little singular that the author of the "Positive Philosophy" should have failed to seize upon the positive principle, and should content himself with the negative one. *Ennui* is but the pain, or discomfort, which always follows the deferred enjoyment of the exercise of natural function. Such exercise is a true positive pleasure, and therefore all the stimulating and progressive tendencies observed to arise from *ennui* should properly be set down to the account of natural exercise. While the common stimulus may be analyzed into love of exercise and fear of *ennui*, the latter may have never been experienced, and therefore never feared; while the effects are accomplished the same in either case, showing that the former is alone sufficient. In fact, *ennui* is rather an artificial stimulus, and only appears in cases where the normal liberty of action has been artificially restrained. Where no such restraint exists, there is an exact balancing of the forces within the organism, and the individual resumes action at the precise point where the pleasures of activity come to exceed those of repose. The study of the movements of an animal—for example, a dog—which is wholly unrestrained will suggest this explanation *a posteriori*. The simple love of activity, therefore, is one of the most powerful of all stimuli, and, next to the two more special impulses already considered, constitutes the most important factor in both organic and super-organic evolution. Indeed, when extended to the full length which the phenomena would warrant, this might be regarded as the generic principle, of which not only the two already mentioned, but all others, are but special forms and localized applications. The general principle might then be denominated the stimulus to exertion which the pleasure of the normal exercise of function constitutes.

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* See *supra*, p. 117, note.

As soon as organic and super-organic development reaches a certain point, there arises and progressively develops another sentiment, which eventually forms a powerful spur to human action in the direction of real progress. This is the sentiment of taste, the esthetic sentiment. I need not dwell upon the great mass of evidence afforded by human history and social life of the potency of this source of pleasure in carrying men forward to higher states of social and individual perfection. The works of Phidias, of Michael Angelo, and of Mozart, together with those of their long and brilliant train of followers and collaborators in all the departments of fine art, are facts too familiar to all to need be more than referred to their proper place in the general argument.

The pleasures of the intellect form a stimulus of great strength for the most highly developed individuals of the race, and, though restricted to so few comparatively, can not be left out of account as motives to human action and ends of being. It is here that the purposes of nature and the purposes of man most nearly meet, and the means of nature become most nearly identical with the ends. For intellect alone can appreciate the results of its own efforts, so that, while the immediate exercise of the cerebral faculties forms the primary stimulus to mental labor, the point is at length reached at which this source of enjoyment is re-enforced by a lively sense of the good which this labor is destined to accomplish, constituting a derivative pleasure even greater than the original one. Again, the quality of intellectual enjoyment is so far superior that it is in this sense raised above all other stimuli, and may be thus classed higher than its limited diffusion would otherwise justify, and assigned a place among the primary motives of human action. And, as the work of cephalization goes on, this must continue to become more and more widely diffused, until eventually the mass of mankind will experience the progressive impulse to brain-exercise whose consequences are social evolution.

These, then, are the five primary stimuli to progress in the social scale, the first three of which are chiefly preservative, while the last is pre-eminently progressive (vol. i, pp. 472, 478, 479). Secondary and derivative stimuli might be enumerated, but, as most of them could be readily referred to the five primary types, their consideration will be omitted. The ends of man, then, which are at the same time the means of nature, are primarily and principally these: 1, the pleasures connected with nutrition; 2, the pleasures connected with reproduction; 3, the pleasures connected with general physical exercise; 4, the pleasures of taste; and, 5, the pleasures of the intellect. These pleasures, taken in connection with those secondary ones derived from them, constitute the immediate incentives to all action, and may be comprehended under the one general term *happiness*.

Happiness consists in the realization of all the positive forms of feeling, attended by a more or less complete absence of the negative forms, known as pain. Happiness, in this sense, is the sole end of life, the primary object of existence —a truth which comes forth with great power when we remember that, under the fundamental law above formulated, the attainment of this end is certain to be followed by the fulfillment of the ends of nature. To attain happiness, is to employ the *means* whereby Nature works out her ends—preservation, progression.

The above considerations are the logical outcome of a thoughtful study of the phenomena of feeling. It may seem strange to some that these phenomena should be thus placed at the very base of a philosophic system whose chief object is to exalt the intellect, and which expressly avows that only by *intellectual* culture and the increase of *knowledge* can the true progress of mankind be secured. There is an apparent incongruity between the doctrine, on the one hand, that progress consists essentially and solely in the elevation of the feelings, the increase of pleasure, the elimination of pain, the intensification of sentiment, the creation and diffusion of new enjoyments, the encouragement of natural emotions, the gratification of the normal instincts, the satisfaction of desire, and the general pursuit of happiness; and the doctrine, on the other hand, that progress is to be attained solely through the cultivation of the intellect, the acquisition of knowledge, and the thorough and universal dissemination and enforced adoption of educational measures for the elevation and systematic development of the cold, objective faculties of the mind.

To bring these two seemingly incoherent and incongruous doctrines into harmony, and to show the true mechanical dependence of the one upon the other, as cause and effect, is one of the primary objects of this work. The arguments claiming to do this will be found diffused throughout its pages, and the reader must accept or reject them, according to the constitution of his mind, after he has completed their perusal. At present, the conclusion alone can be distinctly stated, and the general line of argument briefly indicated.

We have already seen that, while the objects of Nature are preservation, perpetuation, and improvement, her means are the corresponding phenomena of feeling, just considered in detail. We have also seen that Nature's means become the sentient creature's ends, the attainment of which, always for their own sake, results, through adaptation, in the accomplishment of those ulterior ends of nature of which the organism usually has no conception. But, throughout the universe, ends are only attained through means, and we have not as yet considered the means by which the creature secures its ends. These means are of two kinds, direct and indirect (*supra*, p. 94). Wherever the object necessary for the gratification of a desire can be obtained by simple appropriation, the means are direct. Wherever cunning, stratagem, or, in fact, any degree of reasoning is required, the means are indirect. Many higher animals, doubtless, employ indirect means in many cases, the elaborate instincts of insects forming a sort of indirect means of ministering to their wants (*supra*, p. 104). But the only being that makes extensive and continued use of indirect means is man. In fact, his progress has chiefly been due to the adoption of such means, and it is thereby that he has obtained such complete control over all other living things. A still greater secret of his success is the control he has been enabled to exert, through these indirect means, over the physical forces of nature. The true source of this power is the intellect. The employment of indirect means of gratification commences with the beginning of the rational faculty, and grows in exact proportion to its growth. The two are one and the same. The higher development of this power is marked by the adoption of indirect means of gratification on a wider and increasingly wider scale. It begins by that grade of cunning which ensnares an unwary fish or hare; it grows until it can plan military campaigns and gain control of millions of people. This truth need not be illustrated. The important thing to be here noted is, that the adoption of indirect means of gratification is synonymous with the exercise of the intellectual faculties. And this holds throughout the highest possible conditions of progress. It is evident to every clear-sighted mind that the greater part of the evils which society suffers are due to the want of wisdom of its members. It should be equally clear that increase of wisdom can alone realize higher degrees of social development. The success with which society has thus far met has been due to the adoption of wise and far-seeing indirect means to this end, and whatever further success is destined to come to society must come in the same manner.

If all this is true, it is easy to see that the progress of society must depend on the progress of the intellect, and, while the end of social as of individual being is to minister in the highest possible degree to the feelings, this end can only be accomplished by the most thorough cultivation of the intellect.

The inconsistency, or at least apparent incoherence, of this part of the argument is thus removed, and the connection established between all its parts. Human happiness, which is the ideal end of all social effort, can only be secured by the elevation and expansion of the reasoning powers of man, which constitute the indirect but sole effective means by which that end can be attained.

It is the object of the present chapter—leaving the consideration of all the proximate ends of human effort enumerated in the preceding chapter, to come in their order of proximity in the several succeeding ones—to elaborate the first proposition of the argument only, which declares happiness to be the ultimate end of conation. The necessity for a formal defense of this principle rests partly upon considerations of method, as occupying an important place in the systematic treatment of the general issue, and partly upon intrinsic grounds; all similar attempts thus far made having proceeded from somewhat different stand-points, and most of them having involved additional claims which are not needed for the complete symmetry of this treatise.

It has already been sufficiently insisted upon that, with respect to all forms of life, even vegetable forms, the ends of nature are two, viz., subsistence and procreation; that every species brought into existence is provided with the means necessary to continue that existence for so long a time as may constitute a natural life, and also to give existence to others of the same species. These two objects are all that nature seems to have sought to accomplish, leaving development, or progress, to circumstances. This, therefore, may be called *cosmical utility*, since it is functional and biological, standing in contradistinction to *individual utility*, which rests on feeling, and is moral, or sociological. Individual utility demands more than mere existence and that perpetuated. It demands the *enjoyment* of functional activity. The animal does nothing else but seek the satisfaction of its desires. It is incapable of performing an action except as impelled by the motive of obtaining such satisfaction; and also in man, whether his desires be high or low, worthy or unworthy, they alone prompt his actions.

It follows from this, too, that utility is a relative term; *i. e.*, it varies with the subject. What is useful for one creature is not so for another. That which would render man happier on the whole might diminish the enjoyment of all the rest of animated creation. The domestication by man of the animals that he slaughters for food or puts to his service is not generally supposed to be an advantage to them,* though it certainly is to him. Those who impatiently ask of what use fleas, mosquitoes, and parasitic pests can be, forget that these creatures have a right to existence, and a utility of their own. The world, as we saw in the last chapter, is not anthropocentric: it would require the greatest good to the whole universe to constitute an absolute utility.

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* For facts in support of the opposite view, see a paper by the writer, on the "Animal Population of the Globe," read before the Philosophical Society of

With the lower animals, the desires are seldom more than present impulses; but with man, possessing sufficient intellect to judge somewhat of the consequences of his acts, they are controlled by reason and judgment. There is, however, no generic distinction. A man refrains from performing an act which his impulses prompt him to perform, only because he judges that such performance would deprive him of a greater pleasure in the future than it would afford in the present. It is universally the greatest happiness and the least discomfort, either present or future, that determines his action or inaction, and certain brutes act to some extent with reference to the future; otherwise the fear of punishment could not influence a beast of burden to submit against its present will to the yoke of its master. The difference, like all others that can be discovered between men and animals, is only one of degree, and therefore it will not be necessary to refer again to this comparison, and we may confine ourselves in future to the human race, and dismiss the rest of the sensitive world as not essential to our especial subject.

It was remarked that man seeks happiness as the great object of his existence, and that this constitutes individual utility. But we must go a step further, and maintain that happiness is the only object of human effort; that utility aims to secure this object alone, that nothing is useful unless it does so tend, and that all other objects—many times, it is true, mistaken for ends—are only means of securing this one ultimate end of conscious activity.

Washington, October 23, 1880. The "Bulletin" of the society (vol. iv, p. 27), contains an abstract. The paper was published in full in the "Chicago Times" of December 18, 1880, p. 8.

This naked proposition is the most general embodiment of the doctrine known as utilitarianism. It has come down to us from Epicurus, if not from still more remote antiquity, and has been defended in all ages with more or less force. In fact, it is what Kant calls the "empirical," or skeptical, view of the foundations of ethics, and is naturally upheld by those who instinctively look inward to the reason rather than outward to authority for a guide to belief. For the same reason it has always been upheld by a small minority, among whom are numbered some of the most clear-sighted minds of their age, while at the same time it is well adapted to fascinate the untaught mass, always eager to seize upon a point against the established code of ethics. It has, therefore, not without reason, been deemed necessary to suppress it as far as possible. Many of the greatest minds, such as Kant or Hamilton, who have no doubt realized the superior claims of this doctrine upon the pure reason, have hesitated to enunciate it from practical considerations. This, it is true, is a mild form of the Jesuitical *dictum* that "the end sanctifies the means," and it serves to show to what an extent this *dictum* influences those even who profess to abhor it. But it is high time to admit frankly that there is involved in such action a lack of faith in the innocence of truth, a species of moral cowardice which does little credit to the heart or head.

It is not a different course of action that is needed, but a frank avowal that cases may occur in which advocacy of truth is productive of evil, and the inculcation of dogmas known to be untrue is necessary to secure the practical interests of society. Not even these statements should be unqualifiedly denied, however strong may be the preference to trust in the simple truth.

The usual mode of dealing with such principles is to envelop them at the outset in a sort of halo of mystic generalities, and obscure, by an exhibition of profundity, the true simplicity of the issue itself. An effort to avoid the admission of a recognized but unwelcome truth may often be detected by this mark.

It is hard, however, to admit that the acceptance of truth will lead to evil consequences, and it is a characteristic of the necessitarian, or scientific, school of thinkers to proceed, utterly regardless of practical considerations, with the dissemination of demonstrated truth. This manifestation of superior moral courage and superior faith in the class who are accused of deficiency in just these attributes constitutes one of the most notable of the moral paradoxes of nature.

Against the utilitarian philosophy a great number of objections have been raised, a few of which it will be necessary to consider. Among the most natural, and one which is likely to rise first in the mind of a casual reader, is that of assigning to this doctrine a low and undignified position. It is thought selfish to insist that all we seek in life is our happiness, and it is regarded an unworthy object to work for, that of extending to all men the facilities for gratifying their personal desires. This objection, however, does not assume the character of an argument, but is simply an appeal to our respect for dignity in philosophy without regard for truth. The true philosopher cares neither for dignity nor for popularity. While it is well to respect these things, so long as they are consistent with truth, philosophy must dictate that their semblance should never be kept up where it is necessary to do so at the expense of truth. Their semblance, I say, for there can be no dignity in error; while any truth, properly viewed, is necessarily invested with dignity. If, therefore, men ascribe that quality to that which is not true, we may rest assured that the quality is as false as the error to which it is imputed.

Dismissing, then, this mere *argumentum ad verecundiam*, let us consider some of the more legitimate objections.

It is said that it is not happiness that we should aim to secure, but *virtue*. Happiness is regarded as secondary in importance, while the great end of all human action is declared to be goodness, morality, virtue. This is the popular idea, the usual weapon which has been wielded against the utilitarian doctrine. It has the advantage of plausibility, and the support that comes from respectability and elevated tone. Indeed, it would hardly seem possible for so pure a doctrine as this seems to be to work any serious detriment when universally accepted. It is not, therefore, a matter of surprise that this belief should have generally prevailed, and, although easy enough to refute, it is, from its character, very difficult wholly to overthrow.

In considering this doctrine, that virtue is the real object of human endeavor, no more reasonable questions can arise than, What is the necessity for virtue? What good can it accomplish? Of what use is it when secured? What does the world want of virtue? Every one must feel that these are legitimate questions, and that they not only demand an answer, but that an answer is possible—that there is a suitable answer to them. Now, if any answer is possible to these inquiries, if an object can be named for which virtue is needed, if there is any end to which, or for securing which, it is to be applied, then it follows, as a matter of course, that virtue itself is not that end, but only a means to it. If the question *cui bono* can be answered at all, it is demonstrated that virtue is not, as claimed, the ultimate object of human action, but merely a means of securing some ulterior object, whatever that may be.

Since it is a legitimate question to ask what the world wants of virtue, and there is a proper answer, we may next inquire what that answer is. But it is obvious that the true object of virtue is to make men happier. For to say that it is to make them better, is only to say that virtue is needed to make them more virtuous. And one can think of no other possible object of virtue than that of making men happier. No one can deny that it does this, and therefore it is clear that it is for this purpose that it is needed. But this difficulty does not present itself when we acknowledge happiness to be the object. For, when we ask what we want happiness for, we clearly do violence to the common understanding of the term. No one can give a rational answer to such a question. It can not be said that happiness stands in any such relation to any ulterior object; it has no object, it is complete and final in itself. When we ask of what use happiness is to man, we can not say that it serves to make him more virtuous, or more just, or more intelligent; and, if we say that it enables him to enjoy life better, we only say that it enables him to be happier, and employ the "vicious circle" as before. We can not, therefore, escape the conclusion that happiness is the ultimate object.

Again, it has been said that man is placed here for improvement, that the object of his existence is his own development and perfectionment. Certainly no more noble object can be named than that of living for the purpose of developing one's faculties. Nor can our paramount duty to exert ourselves for the accomplishment of this object be questioned. And yet it is necessary to treat this substitute in the same manner as the last; for it is not possible to conceive of any importance as attaching to the idea of progression or improvement, except in connection with some object which this is to subserve, some ultimate purpose connected with man's peculiar nature as a being endowed with capabilities to enjoy.

When we watch the unfoldment of worlds in the universe, and with the aid of science discover the great scheme of development which is going on in unorganized matter, what purpose do we imagine all this could serve if there were no beings in the universe capable of becoming in any manner conscious of this progressive change? Of what use could it all be, if there existed nothing capable of enjoying it? We can not conceive of the idea of utility except as connected with some organism susceptible to the impressions of pleasure and pain—no, not even in the deity, unless we ascribe to him such susceptibility. And so, when we consider human development, we unconsciously connect it with the idea that in some way or other it is tending to diminish human sufferings and augment human enjoyments. Development, like virtue, becomes then only a means to the ultimate end, happiness.

Another doctrine prevails very extensively among a certain class of people, and from its prevalence may demand some notice here, which its lack of any immediate relation to any branch of rational or even speculative philosophy might otherwise render inappropriate. I refer to that doctrine which, in the language of its votaries, may be said to assign as the great purpose of life the principle embodied in the formula "the glory of God." But the holders of this doctrine would not admit that they believed God to be any less than absolutely infinite in all respects. Deity must, therefore, be already infinite in "glory." It therefore involves an obvious absurdity to suppose that the acts of men can add to this attribute. And, if it is claimed that human acts are calculated to please or displease God, this not only denies the infinite happiness of deity (since, otherwise, he could not be rendered more happy or less happy by any event), but it is in fact an admission of the strict utilitarian doctrine that the greatest amount of happiness is the end of all actions, only transferring the subject in whom that happiness is to be created from the sensitive being man to the deity, also regarded as sensitive. Thus, it has been held that, according to the theory that virtue is the object of all human attainment, virtue is needed to please God; that is, that it is not for man's happiness, but for that of deity, that men should seek virtue, purity, and uprightness.

There are some who, disliking the terms pleasure, happiness, etc., as applied to deity, seeing that they are founded on sensibility, which they can not attribute to God, have sought to avoid this inconsistency by asserting an *absolute right*, independent of the happiness of any being and of all other principles, as the naked will of deity, all failure to conform to which is wrong. Thus, they allege that virtue is but a means of arriving at this absolute principle, admitting, as they must, that it serves to promote human happiness, but denying that such is in any sense the object of virtue. This theory has some recommendations which make it superior to the last. And still it seems a barren speculation to claim that deity would require a rigid adherence to any fixed rule as the object of human action, when such adherence had nothing to do with the happiness of the being of whom it was exacted, or of any other being in the universe. There is something in the human mind that unconsciously rejects such a theory, and in spite of itself persists in raising the interior inquiries. Of what *use* is such an adherence? Whom is it to benefit? Whose happiness is it to increase? and, Why this rule of right, unless its observance has as its object and its only object to diminish suffering and increase enjoyment?

Lastly, there is a class of moralists who set up as the ultimate end of action that which they denominate "doing right." This ideal, however, is usually easily reducible to one or other of the preceding. *To do right* is either to act virtuously or to act righteously. The former of these is clearly identical with aiming at virtue as the end; the latter, as the word is commonly employed, is equivalent to seeking to please the deity. *Righteousness* is a religious term, and not a moral one. It serves, however, a good purpose in aiding us to grasp this distinction. Its root, *right*, as ordinarily understood, has a moral signification, *i. e.*, it connotes relations between men and men. But it is often, also, employed to connote relations between man and the Supreme Being, in which sense it corresponds with the derivative *righteousness*, meaning *godly*. It is in this sense that it is used when made the end of action. *Doing right* has here no connection with human welfare, else the end would be human welfare, *i. e.*, happiness, and *right* merely the means of attaining that end. *Right* thus understood is wholly arbitrary. Our only knowledge of it must be derived from books of revelation. Those who have believed in this form of right have, therefore, made extraordinary efforts to ascertain the correct interpretation of revealed precepts, which, being wholly cut off from the assistance of reason, are as liable to be of one character as of another, and must be certainly known before any course of conduct dare be pursued. It is, therefore, not to be wondered at, so vastly important is a correct understanding of precept, that, where different interpretations have been made —which, strange to say, has frequently occurred—the most intense feelings have been aroused, and the most violent and sanguinary struggles have ensued. For every thing, both here and hereafter, depends upon the precise meaning of a word, and the change of a single letter may work the total destruction of a sect or nation—witness the signal havoc upon the history of mankind and the map of the Old World which was wrought by the contest over the two Greek words *ὁμοουσία* and *ὁμοιουσία*.

With this idea of *right*, the utilitarian philosophy can have nothing to do. It employs this term in its moral acceptation, as implying relations between men and men. According to this school of thought, therefore, an action is right if its ultimate results upon all beings within its influence, and capable of *feeling* the effects of that influence, are of such a character as to produce more pleasure than pain, or relieve more pain than they occasion. And, *vice versa*, an action is wrong when these results, with the same limitations, produce more pain than pleasure, or cause less pleasure than they prevent. It is only by such a definition that we can lay any foundation for morality, while by means of it we reduce ethics to a scientific basis. It is clear that no object is good for any thing except in proportion as it affects the organism. It is this power of an object to produce an effect which alone can give it utility. This is as applicable to actions as to objects. An object has no power to produce effects upon the senses except through its properties, which are the active forces of nature manifesting themselves in different ways through different forms of matter. Therefore, it is not the objects themselves which produce these effects upon our senses, but, so to speak, the *actions* of these objects. And if we class men with natural objects, as the science of society and that of morals require us to do, and regard their actions as the peculiar modes in which the universal force manifests itself through the matter which composes them, we have nothing more than the extension to one class of objects of a principle previously applied to another class.

The effects of actions performed by men will be admitted by all to be the basis of utility. In what, then, do those effects consist, to constitute an action useful or the contrary? The answer to this question may be: conformity or non-conformity with right. This brings us back to the question of right and wrong.

It is necessary to establish a clear distinction between right and wrong on the one hand, and guilt and innocence on the other. Actions are right or wrong according as they are actually upon the whole beneficial or injurious, and independently of existing codes of action. They are guilty or innocent * only in the opinion of mankind according as they violate or conform to established rules of conduct. Hence, a person may really be innocent while performing a wrong action, or guilty while performing a right one. Guilt and innocence can have no connection with utility.

We are, therefore, merely to consider what makes an action right or wrong, or what kind of effects must result from an action to constitute it right or wrong. It is evident that those effects should be such as will result in the greatest good to man, or the greatest good in general. Hence, we are narrowed down to the simple question of the greatest good.

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* The etymology of the word "innocent," *i. e.*, harmless, is not borne out by usage, at least when applied to human actions, as the antithesis to "guilty."

And, since nothing is good except in so far as it produces or tends to produce agreeable effects, *i. e.*, pleasure,* which is the condition to happiness, therefore, according to the definition, such tendency makes an action right. This, of course, must be extended to embrace the entire sum of effects which the action can ever produce. And, since the object of human action is to conform with absolute right, it follows that the attainment of happiness, to which this right is only itself a means, is the ultimate end to be sought.

What has been said may be sufficient for a direct proof of the utilitarian doctrine. It may not, however, be deemed superfluous to add some considerations of an indirect character as showing the inconsistency and absurdity which the denial of this reasoning must involve. Let us see for a moment to what we are led when we deny that the principle of right is based upon the idea of the greatest amount of happiness, or the greatest good.† It would then follow that an action might be right, and yet not produce the greatest good. This is, of course, according to the definitions, equivalent to saying that an action to be right need not produce good at all, or that an action may be right and yet produce evil to an indefinite degree. Again, if right and wrong have no connection with happiness and unhappiness, then it equally follows that an act may be wrong, and yet be upon the whole beneficial to any degree. Yet, notwithstanding these patent incongruities which meet us at every point when we call the utilitarian doctrine in question, nevertheless, the ingenuity of man has been taxed to the utmost in attempting to overthrow that doctrine. Volumes have been written, and every possible case, real or hypothetical, has been cited in support of the opposite theory, considered so dear to the special interests of man, viz., the theory of abstract moral right.‡

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* Spencer, "Data of Ethics," p. 30.

† By "greatest good" is not meant greater good than any other action, but greater good than no action; *i. e.*, the algebraic sum, as it were, of its effects must show a surplus of benefit.

‡ See Cousin, "Du vrai, du beau, et du bien," pp. 288, 342.

The following is one of these cases, referred to as being among the most difficult to meet: It has been supposed that a philanthropist of the utilitarian school robs a miser, for the benefit of the needy, of certain moneys which he had forgotten he had, and never discovered to be missing. In this case, the money, which otherwise could never have benefited any body, has been made to accomplish good to worthy persons, without producing any pain, even to the miser himself. Restricting this to the one case, with all its attendant circumstances as supposed, was the action of the philanthropist right or wrong? It is claimed that the common sentiment of mankind would unite in declaring it wrong.

Now, I apprehend that the decision in such a case would necessarily turn upon the fact of notoriety. Limited to the single instance, and so concealed from view and public scrutiny that there was no possibility of its being made known to any person but the performer himself of the act, it would involve nothing really immoral, although it might be regarded as somewhat pragmatic. The difficulty consists in conceiving such a state of things to exist. It is not to the act itself that the mind so involuntarily ascribes the evil, but to the consequences of its being made known. For every body feels, from a common knowledge of human nature and human weakness, that it would be impossible for men to adhere strictly to such a precedent if it were set up. The first attempt to apply it would probably be a violation of it, and would result in mischief. Hence, in forming an opinion, these consequences are unconsciously and necessarily taken into the account, and become so completely interwoven with the act itself as to be confounded with and mistaken for it. It is the want of precision and perspicacity in human deductions generally which renders it so, and it is this which has given rise to all the rules of conduct which society has established for itself. Men are aware of their own feeble abilities to follow any thing but arbitrary rules, and, though those rules may be injurious in certain particular cases, still it is considered best on the whole that they be always adhered to. And, as regards infallibility in these rules, there is a regular gradation throughout the moral and judicial codes (*infra*, p. 451).

First may be placed the rule that some autocratic ruler should and can always with safety be obeyed. This would of necessity admit of an infinite number of exceptions. Next come the laws of nations more civilized, enacted by legislators of various capacities for judging and framing them, most of which are styled, and all of which may be classed, as *jura positiva*, or arbitrary laws. These are immediately followed by common-law codes, derived from customs of different ages and peoples, and having different and often quite inferior views of men and things, and from the successive decisions of judges of varied abilities, much of which might also be regarded as *jus positivum*, and all of which is, to say the least, very far from capable of meeting all the cases that come up among men.

So far is this true that courts of equity, established for the purpose of suiting laws to circumstances, and preventing these arbitrary rules from working evil in many of their practical applications to unforeseen cases, have been found necessary in all partially or wholly civilized countries.

After these comes the moral code, built up from the united judgment of all men in all ages, but still very crude and imperfect, though improving along with man's mental improvement. Throughout this code there may be found the same regular gradation in the relative perfection of the rules and their adaptation to cases. This is observable when we survey the whole field at a single glance.

It is probably safe to say that no general rule for human action was ever established or conceived by the ethical expounders of the world, under which no case could possibly occur which would render its strict application more injurious than beneficial. Still, many that we have are so nearly incapable of exception, that any attempt to depart from them, in the present state of the human mind, would be extremely pernicious. All see this. Long experience and education have so imprinted them upon the mind that we are shocked at the idea of any departure, and can not conceive that such a course could fail to result in evil. Of this class is the rule that it is wrong to steal; and, though in the case stated above, with the almost impossible restrictions and limitations annexed, it might really be right to steal (if such an act could be called stealing), still so firmly is the conviction fixed in the mind of man that this rule is infallible, that he has come to adopt the error that right is something abstract, and independent of the effects of the acts enjoined or prohibited. So it is with the rule against falsehood. Yet cases actually occur where it is no wrong, but rather a duty, to speak falsely. Suppose a scientific explorer like Dr. Livingstone, whose labors and success are of great use to mankind, to be placed in such a predicament, while in the interior of Africa, that nothing but a falsehood, told to the savages into whose hands he had fallen, could save his life to his family and friends, and his valuable records to the world—how foolish, nay, how wrong, would be his course, should he, through a mistaken notion that right was something absolute and that falsehood was never justifiable, sacrifice so great interests to so questionable a principle! * These strictures might be extended to every rule in the moral code, even to the so-called "golden rule," by the simple exercise of ingenuity in framing hypothetical cases.

Such statements will perhaps by some be pronounced dangerous, but, if they are so, it is not because they are not

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* Some might seek to make this an exception, on the ground that savages are not properly rational beings, and that the practice of deceiving them can be justified on the same principle on which that of deceiving animals and maniacs is justified. This view is interesting as confirming the law laid down in Chapter VII, that deception is the fundamental process in all intellectual action (vol. I, p. 501).

true, but from the liability of individuals, in the present crude intellectual condition of society, to mistake apparent for real exceptions to the established rules of conduct. There is need of a court of equity to take cognizance of these exceptional cases, but, as the code is unwritten and cognizable only *in foro conscientiæ*, that court can only be established by the higher development of each individual mind.*

When we look at the acts of men at large, we find that the principle above laid down is the one upon which they are all performed. When, for example, we see swarms of active humanity moving in all directions, each individual at his own peculiar pace, up and down the chief streets of any great metropolis, we sometimes ask ourselves what can be the varied motives which impel each one. A number of probable objects arise in our minds—money, love, fame, duty, etc. But is there not a generic motive which embraces all these? There certainly is, and that motive is the attainment of happiness, or, what is the same thing, the escape from unhappiness. All these other incentives are but the several means adapted to the varied dispositions and circumstances of each for attaining this object. Even the religionist, who of all others would be the most earnest in denying this (to him) low and earthy doctrine, is, by his very belief, a consistent supporter of it, for it is nothing else but the hope of happiness that actuates him to perform every act of devotion and of sacrifice. That the happiness he seeks is future, does not at all alter the character of those acts. He is pre-eminently the true and practical exemplification of utilitarianism and even of hedonism.

"But," says one, "this makes our acts purely selfish. Can we do no noble, disinterested, unselfish action?" We certainly can do many noble acts, but no voluntary action can be disinterested. No act can be performed that is not prompted by the motive of increasing, either directly or indirectly, the personal well-being of the agent. It must not, however, be supposed that in point of fact those acts do secure the object sought. It is only claimed that such is the motive, and the act is always in obedience to that motive. The actual attainment of the object depends upon the judgment (*supra*, pp. 91–93).

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* For an examination of the various codes of action, see vol. i, p. 514.

It is quite remarkable that utilitarianism should have been most strongly defended by English-speaking writers, whose language is notably deficient in terms by which to convey the delicate shades of meaning required for its adequate elucidation. The need of a milder substitute for *happiness* has been seriously felt, and no doubt serves to obstruct the progress of rational views on this subject. That the defect is in the language and not in the conceptions is evident from the fact that most other languages possess better words. The French "*bonheur*" or the German "*Glückseligkeit*,"* had they their counterpart in English, would afford a delightful relief.

We are constantly confined to the words pleasure, happiness, enjoyment—all too strong—unless we fall back upon *good*, *welfare*, or *benefit*, which always seem to require definition in terms of one of the others.

With the somewhat clumsy instruments which we possess, then, let us endeavor to gain a clearer idea of the special nature of utilitariansm.

That all ideas of advantage or disadvantage are grounded in the experiences of pleasure and pain will doubtless not be questioned. The relations of pleasure and pain to each other, though obvious in extreme, and even in all ordinary cases, become somewhat obscure in certain special cases.

They present under certain conditions an apparent relativity, which has created much confusion in the minds of many writers. Aside from what have been called the "luxury of grief" and the "luxury of pity,"[*] it is true that sudden partial relief from great pain results in a sensation not distinguishable from pleasure, whose real nature of lesser pain, however, is soon revealed, if continued unchanged for a short time. On the other hand, it is said that pleasures may be so intense as to amount practically to painful sensations.[†] The phenomena of itching and titillation present many enigmas, and certain prurient emotions render it impossible to say whether pleasure or pain is experienced.

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* An ingenious writer, Dr. Charles Waldstein, draws attention to this fact in an article in "The Popular Science Monthly," vol. xiv (1878), p. 199.

These two latter classes of sensations, however, seem to furnish the key to the solution of the chief difficulty. Pruriency of all forms is a species of *desire*, and desire in itself lies very near the base of all the sentient faculties. All the forms of feeling which can be called *indifferent*[‡] are specialized forms, as where a part, like the ends of the fingers, has acquired the faculty of recognizing slight resistances without experiencing either pleasure or pain therefrom. In most cases, whether in the developed or in the undeveloped animal, to feel at all is to experience agreeable or disagreeable states. This was necessary at the commencement of the development of the sentient faculty (*supra*, p. 112). This distinction of agreeable and disagreeable was the only *raison d'être* of feeling at the outset. The pursuit of the one and avoidance of the other were all that could render feeling advantageous to the organism. But, originally, agreeable states could have only resulted from the normal exercise of function. The only advantage possible was in securing such exercise, and to this end all the faculties of the organism must be adapted. Only those states would, therefore, be sought which secured this end, and only those avoided which prevented its attainment. It was for this that these states were created, and they could not be otherwise than in harmony with the end. At this early stage, at least, pleasure could be defined as that which secures the full exercise of normal function, and pain as that which prevents such full exercise. But the organism in seeking means to the exercise of function must be assumed to lack such means, otherwise it would not seek them, and the lack of the means to the exercise of function is the same state which is produced by adverse influences of whatever kind. The organism is in the same state when disposed to seek the means of fulfilling its normal physical activities as it is after some external circumstance has deprived it, to the same extent, of such means previously possessed, viz., the unsatisfied state, the disagreeable state, the painful state. Clearly seizing these equivalences, we perceive that the state which prompts the organism to seek any object whatever is properly, though to limited degrees of intensity, a state of pain. But the inclination to seek an object is desire, and thus desire is psychologically a painful state.* Desire may, therefore, be called *negative pain*, being the disagreeable state experienced from a lack of the means of fulfilling a normal function, as distinguished from *positive pain*, which is the disagreeable state experienced from having been deprived of such means previously possessed. The two, however, come again to one when we consider that, in the first as well as the second, the organism has previously possessed these means and been equally deprived of them, and the only distinction remaining is the difference of mode in which the deprivation has been accomplished. In the first case, the organism has usually itself consumed them in its normal exercise of function, in which the process is gradual; while, in the second case, adverse and external influences have removed them, in which the process may have been abrupt.

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[*] Spencer, "Principles of Psychology," vol. ii, pp. 590, 623; "Data of Ethics," p. 229.

[†] Cicero ("De Senectute") speculated upon the question whether a prolongation of the most excessive pleasures of which the body is capable would not become unbearable, and eventually result in death.

[‡] Spencer, "Principles of Psychology," vol. i, pp. 272, 474.

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* The true nature of desire has been generally misunderstood by philosophers. M. Victor Cousin, for example ("Du vrai, du beau, et du bien"), confounds desire with pleasure. He says that, if the beautiful is only agreeable sensation, the love of beauty can be only desire. This he combats, and maintains that the beautiful is something more than an object whose possession is sought. Kant, however, held that desires were pains, and pleasure only an escape from pain, *i. e.*, that the gratification of desire was simply the relief from pain.

We are obliged, therefore, to recognize in desire a painful state, which is converted into a pleasurable state by supplying the thing desired. Among the higher types of human life, apparent objections to this view arise, and certain derivative desires, assuming the form of highly developed emotions, appear to be in a certain sense pleasurable, rather than painful. But this pleasure belongs in such cases to the *faint series*, and consists in the anticipation,* through the action of a highly developed imagination, of the gratification of the desires in question. Such cases, therefore, form no exception to the law above formulated, but belong to another department of psychology.

The other important general conclusion which we thus reach is that, just as desire is pain, so is the gratification of desire pleasure. But are they always co-extensive? Is all pain desire, as all desire is pain? Does all pleasure consist in the gratification of desire, as all gratification of desire results in pleasure?

The first of these questions requires some verbal qualifications before an affirmative answer can be given. In what we have denominated negative pain, the terms are clearly equivalent. But we have seen that the two classes of pain are fundamentally identical, and hence this must also be in reality true of both when we give the same general meaning to the terms, though this may reqnire a certain deviation from the popular use of them. It is clear, however, that the sensation of positive pain, of whatever kind or degree, involves the desire to be relieved from it, and between severe pain and mere itching there may be all degrees, as nearly every one knows from experience.

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* Pleasures of anticipation are inferior in kind as well as in degree to those of participation. Notwithstanding the attempts of modern moralists to clothe them with something purer and higher than flesh and blood, they are, nevertheless, in a certain sense, pathological, or morbid, in their character, and should never be indulged to the point where they tend to assume the *rôle* of vivid impressions.

To the second of the above questions no such qualification is necessary. The expressions "pleasure" and "gratification of desire" are at all times, by the exercise of a slight liberality in the application of the words, interconvertible. For, even in the case of unexpected pleasures, they consist in the satisfaction of potential only, instead of actual desires. The consummation, to become an active object of desire, need only be suggested to the mind. There are no negative pleasures not thus explainable, and even the passive state called "contentment" consists in the simple and continuous exercise of normal functions, moderate in degree, which, if withheld, would give rise to desires whose satisfaction would restore the given state.

In the lowest forms of life endowed with feeling, the degree of agreeableness experienced in performing the functions necessary for the maintenance of life is doubtless very low, as is also, relatively, the degree of disagreeableness experienced either by the absence of the means of such performance of function or by the adverse agencies which frequently act upon the organism and injure or destroy it. But the higher the organization the more intense the sensations, whether agreeable or disagreeable. This is because the more complicated the mechanism the more delicate it is, and the greater the damage occasioned by an equal amount of violence. A high degree of sensibility is unnecessary to a low degree of organization, since the tenacity of life is inversely proportional to the degree of organization. *Actinosphærium* and other protists, which may be artificially propagated by cutting them in pieces,* do not require any elaborate apparatus for warding off danger. *Helix Veatchii*, which was observed to live six years without food, stands in no great need of a keen sense of hunger. The hydra lives as well after being turned wrong-side out. Wheat-eels and tardigrades revive after twenty-eight days' desiccation by chloride of lime and sulphuric acid in a vacuum, and exposure to a temperature of 120° Cent.,[*] while Octopus, the highest of mollusks, and lobsters, the highest of crustaceans, replace their arms and legs when lost. Such creatures have moderate powers both of enjoyment and suffering, because high powers are not demanded by their physiological economy. As we rise in the scale, the same law holds throughout, that the degree of feeling increases with the degree of organization. From the point of view of natural economy and Nature's ends, it is necessary to dispel the idea that enjoyment is an end. It is only a means to the end of maintaining life. Nature does not seem to care whether her creatures enjoy at all, so long as they persist. She is as choice of the vegetable as of the animal kingdom, yet here the end—continuous life—is maintained by other safeguards. In the animal world, feeling is simply a substitute for cellulose (vol. i, p. 348). Both perform the one office of preserving the organism.

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* Haeckel, "Das Protistenreich," S. 49.

It is the animal organism itself which makes feeling an end, but this it is constituted to do and does universally. To all organisms feeling is and must of necessity be the supreme and ultimate end of all their activities. To this law man is not in the least degree an exception.

In higher organisms, and notably in man, the number of organs, and therefore of functions, is vastly increased. Man thus becomes capable of thousands of distinct kinds of pleasures and pains, many of which have only a remote connection with the mere life-sustaining functions. These are

[*] Doyère, "Mém. sur les Tardigrades et sur leur propriété de revenir à la vie," 1842, pp. 119, 129, 131, 133. Ehrenberg, "Die Infusionsthierchen als vollkommene Organismen," Leipzig, 1838, S. 492–496. Humboldt, "Kosmos," Bd. i, S. 310 (note 95 to p. 225).

many of them at once vague and intense; particularly in the case of pleasures do the emotions seem to rise above the sensual, localizable sensations of the body, and lead to the erroneous popular belief that with some of them the body has no connection. The general sum of all pleasures, *i. e.*, the satisfaction of all desires—being the same thing as the free normal exercise of all functions—is what constitutes happiness in the abstract, and yet even this term connects the emotions too closely with the bodily organs to satisfy some people, and, as before remarked, most languages possess words denoting a still more idealized form of agreeable experience.

This agreeable state, however, by whatever name it may be called, is the ultimate goal toward which all expenditure of effort is necessarily directed, and this independently of the number or kind of proximate or intermediate ends which may be made the more immediate objects of pursuit, and independently, also, of whether these proximate ends are or are not *believed* to constitute the ultimate end.

Can happiness, then, be directly sought? By the individual, yes. By society, no. The individual may seek it directly, but can best attain it by seeking it indirectly. The social organism must fail by seeking it directly; it may succeed by seeking it indirectly. This end is best attained, in both the individual and the social organism, by the pursuit of certain *means* more directly within their grasp. But are these means the same in both cases? Assuredly not. And this because the happiness of society is nothing else than the happiness of its individual units, while the means necessary to render these units happy vary with the varying characteristics of these component individualities. The means which the individual adopts may be somewhat special—they may be such as are more or less directly connected with man's emotional or sensual nature. Pleasure itself, and of the more sensual kinds, may, with entire success, be made the immediate aim. The individual has here only to beware lest by excess a greater future pain be entailed than present pleasure derived, and that the happiness of others be not diminished. Within these limits, the pursuit of present pleasure is not only legitimate, but is required and demanded by the wants of each individual's nature.

Where indirectly pursued, the means may be closely bound up with the end, as where virtue, excellence, or uprightness is made the proximate end. This is the domain of ethics, or *ethology*, as distinguished from sociology; and without question the opinion of Mr. John Stuart Mill that this should precede and serve as a sort of foundation for sociology was logically sound (vol. i, p. 217). The proximate ends to be sought by the *individual* must rest upon the *subjective* branch of mental manifestation—they must be related to the *feelings* and be *moral* in their character. But the proximate ends which *society* must seek, in order to act at all in the scheme of securing a fuller measure of human happiness, must rest upon the *objective* branch of mental manifestation, must be related to the *understanding*, and be *intellectual* in their character.

With the former of these classes of proximate ends of conation—the moral class—we have here little to do. Our field is limited to the latter class—to the consideration of the intellectually related social ends of conation, which are prime essentials in the scheme of dynamic sociology. We have to consider the important question whether society in its corporate capacity may not devise and carry out measures which, from their inherent character, must have as their natural result to enhance the general sum of happiness among its members.

This can only be done by a wise selection of means. Any attempt to increase human happiness by direct legislation must, as already shown, utterly fail. What would please one would displease another, and no rule could possess the necessary flexibility to satisfy all. Besides, this disposition to seek happiness is already provided by instinct, and each individual necessarily seeks his own happiness without suggestion or direction from any source. Scientific utilitarianism does not hold that happiness should be made the direct aim of legislative enactment. But, recognizing that the human organism is so constituted that it can perform no action except from this motive, but that, owing to defective correspondence between organism and environment, a large part of these actions miss their aim, it proposes, by an investigation of the laws of correspondence, if possible, to devise means whereby a larger proportion of those actions may succeed in securing the object at which they aim. The prevailing code of morals which makes ideals of virtuousness, righteousness, excellence, and right-doing the ends of conation, are the superficial patchwork of an empirical morality,* undertaken by the individual for the individual, and hence impossible to enforce as universal guides to conduct. Reaching their most perfect state at an early stage in the development of every society, they make no further advance through all the rest of its history, while, notwithstanding them, and in spite of them, conduct rises or falls with the degree of intelligence. Authoritative moral codes are wholly non-progressive, and serve rather to denote the state of society than to secure its advancement. In so far as they are embraced in the scope of sociology, they belong to its statical department, as data for study and facts to be co-ordinated. Coming wholly within the domain of the feelings, they are to be classed among the phenomena to be controlled by the intellectual power, and not as in any sense a power in themselves for the control of other phenomena of the sensibilities.

On the other hand, every thing progressive comes from the intellect. If a change is to be really made in the conduct of men, it must be brought about by the adoption of some rational scheme which the wisdom of the age shall foresee to be certain to secure this end. To say that this can not be done is to admit that the social forces are not capable, like other forces, of being directed to human advantage—to deny that there exists a science of sociology.

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* Mr. Spencer is undoubtedly correct in maintaining that ethics, as commonly understood, is a pathological science ("Data of Ethics," p. 276).

The problem of dynamic sociology is the *organization of happiness*. A cotton-mill is a device by which, after a multitude of interferences with a persistent force and persistent materials, an ultimate end—the cloth manufactured—is at last attained. It is a product of intellectual effort throughout. Recognizing the impossibility of securing the final object directly, a series of proximate ends have been devised and successively secured as the several means to the ultimate end. Not otherwise, in its most general aspects, must be the course which enlightened man shall adopt if he hopes to influence his own progress. He, too, must interfere with the course of the social forces, now running to waste, and direct them into channels of his choosing which lead toward the final object which he desires to secure. If virtue and right conduct are the means to individual happiness, then must some method be devised to render right conduct preferable to wrong conduct. But most of the wrong conduct is due to defective judgment, *i. e.*, defective correspondence between organism and environment. Something must, therefore, be done to complete the adaptation. Error is the result of imperfect acquaintance with the field in which action must be taken. The creature must become better acquainted with its habitat if it would avoid stepping over dangerous precipices, partaking of poisonous herbage, or falling a prey to ferocious enemies. This is the present state of man, and therefore the supreme *desideratum* must be that of familiarizing himself with the world in which he exists. Knowledge, therefore, is the end to be more directly pursued, since through knowledge comes the entire succession of desirable objects—right conduct, progress, happiness. But this knowledge must be the kind of knowledge which brings these ends, not anything that any one may see fit to call by that name—

knowledge that adapts the organism to the environment, knowledge that reveals the relations of man to the universe. The highest and most generalized knowledge is, in reality, the most important and the most truly practical.*

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* The question as to what constitutes the practical can not be fairly stated until the doctrine of theoretical utilitarianism is applied to it. This makes enjoyment the ultimate standard of value—a standard, however, which can not be numerically expressed or quantitatively compared. And yet its recognition underlies the doctrine of the "balance of trade." Of the thousand dollars expended for fire-works, and burned up in an evening, or the thousand expended for platinum-ware which will last for many generations, or the same sum expended for books whose influence will continue to be felt for ages after they have moldered to dust, the question as to which has done most good must always remain a qualitative one, and yet the sums thus expended must bring returns differing immensely in their true value, measured by the utilitarian standard.

CHAPTER X.

PROGRESS.

PRIMARY MEANS TO HAPPINESS, OR FIRST PROXIMATE END OF CONATION.

Dynamic sociology as distinguished from moral science—Dynamic sociology defined—Social progress defined—In what social progress consists—Introduction of the indirect method of conation—Origin and nature of art—Social agencies affecting human progress—Confusion of ideas respecting progressive agencies—Preliminary consideration of progress in the abstract—Progressive agencies—Communication of ideas—Language—Written language and literature—The invention of printing—Pursuit of subsistence—True position of the fine arts—Relation of science to art, and *vice versa*—Successive modes by which primitive man obtained subsistence—The scientific epoch—Artificial character of civilization—Material civilization increases the general sum of human happiness—Latent amelioration—Non-progressive agencies—Government—Objects of government—Protection—Accommodation—Improvement—Origin and genesis of government—Ideal government—Why government is odious—Nature of liberty and the principles upon which it rests—Successive elimination of the illegitimate functions of government—Superficial character of historical and political events—Ameliorative function of government—The two opposite schools of sociologists, both of which avoid the vital question lying between them—How the social forces may be controlled—General laws of social progress—Religion—Definitions—Sir John Lubbock's classification of religions—Major J. W. Powell's mythological philosophy—Herbert Spencer's views on religion—The three fundamental elements of religion—These reduced to one, viz., belief in spiritual beings—Causes that have led to the universal belief in spiritual beings—Relation of religion to human progress—In how far the essentials of religion are objectively true—Evolution of the belief in immortality—Evolution of the belief in deity—Religion a necessity of the existing condition of things—Fundamental identity of religion and science—Simultaneous development of religion and science from a common point of departure—Position of religion with reference to social progress—Alleged temporal benefits of religion—The moral sanction of religion—Solace derived from the belief in immortality—Contemplation of the attributes of deity—Subjective moral efficacy of prayer—Anti-progressive tendencies of religion—Suicidal effects of superstition—Mutilations, orgies, and sacrifices at funerals—Destruction of property at funerals—Opposition of religion to science—Negative opposition, the priesthood—Divorce of man from nature—Asceticism—Self-torture—Positive or direct opposition—Religion and progress—The conflict between religion and science—Conclusion: Method of human progress and means of accelerating it.

Dynamic Sociology aims at the organization of happiness. In this it differs from moral science, which also aims at the production of the greatest happiness, but which seeks this end by the aid of rules for the control of individual conduct. Such rules are *moral* in their character, *i. e.*, they are based on the feelings. They are in the nature of appeals. They may be appeals to the reason, but in behalf of the feelings. Usually, however, they are appeals to the sympathies. They are suggested to the framer directly by experience and observation. Feeling, either egoistic or altruistic, originates them. They are not in the nature of inventions. They may be thought out, but they are not *devised*. They rest upon the most obvious, not upon the most recondite, truths of human nature. They do not recognize any natural forces as at work in the domain of human action. They rather assume the non-conformity of human action with law. But for such assumption they would possess no justification. For, as well appeal to the winds or the tides as to the equally fixed forces of society. It is this which has rendered all regulative systems so unsuccessful. It is only as these appeals have been accompanied by corresponding active measures that they have succeeded at all. Without knowing it, moral systematists have, to a certain extent, recognized the laws of conduct, and have adopted real physical means for controlling action. These, of course, have produced effects, though, from ignorance of the true character of those laws, the effects have often been quite different from, sometimes precisely the reverse of, those desired and expected. But this is only to say that ignorance and error respecting natural laws have operated in the same manner in the department of social, as of physical, phenomena.

Moral science—even that which discards teleology and professes to be rational—is essentially empirical. As a science, as Mr. Spencer admits,* it belongs to the department of pathology. It is little more than a system of therapeutics. Not only so, but it is a system whose method, like the prevailing methods in medicine, is curative rather than preventive.

Now, as previously shown (vol. i, pp. 57, 104, 149), the distinguishing mark of every practical science is the manner in which the forces within its domain admit of being controlled by artificial devices. Until a field of phenomena has been subjected to this test, it can not be said to have been fairly secured to science. Of the two means of controlling natural forces, the direct and the indirect, the former has accomplished comparatively very little. As was early pointed out (vol. i, p. 40), the direct method is that of the brute. The savage employs it extensively and makes no progress. All stagnant peoples depend chiefly upon it. The acts which lie behind it are impulsive acts; they spring from feeling, not from intellect. Every thing that emanates from feeling is conservative and non-progressive. All progress is due to intellectual activity.

Of the two great classes of means which men employ for the attainment of the ultimate end toward which all actions are directed, viz., direct means and indirect means, the phenomena usually classed under the head of moral science belong to the former. They bear the same relation to mind that brute-force bears to muscle. As the race rose in mental capacity, both the primary co-ordinate departments of mind—feeling and intellect—rose together, and for the primordial method of gratifying desire—muscular effort—the two substitutes—appeal to sympathy and rational strategy—developed simultaneously. Out of the former have grown the existing codes of morals; out of the latter, the arts and sciences. But the direct method could no more prove progressive when founded on mind than when founded on muscle, and the code of morals has remained nearly the same throughout all ages. The progress attained by the indirect method is the progress of the arts and sciences. But, for reasons existing in the nature of things, the indirect method has only been applied to the department of physical phenomena, not to those of moral and of social phenomena. Hence, these departments have languished or remained stationary under the influence of the direct method alone.

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* "Data of Ethics," p. 276 (§ 105).

Dynamic sociology consists in applying the indirect method to the control of the social forces.

Defining social progress now more specially as *whatever increases the sum total of human happiness*, since this simply follows from our general definition (*supra*, p. 108), this may be regarded as the proximate end, whose attainment is equivalent to the attainment of the ultimate end. This latter being impossible, except by the application of the direct method, which, as we have seen, promises no advance, it becomes important to strive toward some practical means to which the indirect method may be applied. Social progress is such a means, and it may be attained through intellectual effort.

Adhering strictly to the definition here given of social progress, as whatever increases the sum total of human happiness, the problem presented becomes that of ascertaining in what such progress must specifically consist. What modifications must be effected in the social state to secure the required consummation?

To solve this problem it will be necessary to enter somewhat into an examination of the existing structure of society. The question must be considered whether society, as at present constituted, contains any of the elements requisite to rendering it progressive in this sense, and, if so, what these elements are; or whether, in order to secure this end, elements wholly new and foreign to society must be introduced, and, if so, what they are required to be.

In the latter case, the task might well be regarded as hopeless. If history and experience furnished no suggestion, either positive or negative, no example which clearly points to any utilitarian progress, and none which warns against stagnation or degeneracy, that would indeed be a bold mind which should venture to recommend a novel and untried scheme conceived to be adapted to securing that object. But such happily is not the case. There has certainly, upon the whole, been social progress, although brought about in the same cosmical way in which physiological progress has been achieved, viz., through the operation of the blind forces of nature.

It has already been shown (*supra*, pp. 119, 120) that development in biology is scarcely more than a corollary from the fact of continued existence. Absolute stagnation for any length of time can not be conceived of. It is negatived by the law of the instability of the homogeneous. Therefore, all organized life must either progress or retrogress. Assuming the tendency toward retrogression equal to that toward progression, the state of things which biology reveals would ensue. For retrograde forms would succumb at their inception, and forms at first progressive and afterward, owing to whatever changes in the environment, become retrogressive, would, as surely as this continued long enough, disappear, while only progressive forms could persist. We should therefore behold just such a world as we in fact behold. Development, therefore, or progress in organization, necessarily follows from persistence in life.

It has also been shown (*supra*, p. 124) that in biology progress in organization is attended by increase in the capacity for feeling. This fact points strongly to the quality of progress required by our definition. For increase of feeling implies increase of enjoyment. The only means of defeating this would be to render the increased pains more than great enough to balance the increased pleasures. But this assumes a degree of inadaptation so great as necessarily to render the organism thus affected retrogressive and ultimately to extinguish it.* Increase of feeling must, therefore, in all organisms that persist under it, be attended with a corresponding increase of enjoyment.

The application of these principles to man and to society is very simple and perfectly legitimate. A state of absolute stagnation can not exist in any race or society. All must either be advancing or receding, however slowly or rhythmically. Moreover, social advancement which is able to persist must be of the kind that secures increase of enjoyment upon the whole and in the long run; although, in so complex a field as that of human society, the apparent exceptions to this law may be many, and the law itself difficult to prove *a posteriori*.

States of social organization, apparently the highest, often result in the most complete subjection of the masses, and certainly diminish the sum of happiness except of a few. Ill-founded schemes of government, religion, public economy, finance, art, or even literature, may proceed so much in disregard of the real welfare of the people as in fact, though apparently highly developed and progressive, to reduce the tone of existence and greatly to lessen the normal degree of enjoyment. But such a state is, in fact, retrogressive. It marks the decline in the life of a society, stamps it as in process of becoming *effete*, and ushers in a period of obvious degeneracy which, if not arrested, must end in social extinction.

Existing society consists of a variety of distinct elements. The state in which we observe it has been brought about by the influence of numerous causal factors. It is not enough to state generally that social progress is due to this great cosmical tendency which we have traced throughout the lower departments of life. It is certainly true that this tendency exists, and that it is the remote cause of social as well as of biological progress. But even the biologist looks closer and analyzes the various more immediate elements which combine to constitute this tendency. Much more, then, is it the duty of the sociologist to analyze the progressive tendency in society and to determine the nature of its elements.

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* Spencer, "Data of Ethics," pp. 14, 26 (§§ 4, 9).

Just as in biology there are found, upon close investigation, two general classes of elements, favorable and adverse, so in society there are found to exist both progressive and anti-progressive elements. The field of social phenomena differs, however, from that of life in general in one very important respect—the existence of an intellectual force. This force has been developed in the same cosmical manner as the other social forces—the desires; but it nevertheless differs so fundamentally from these as to mark a step in the general progress of nature analogous to that which the development of the former marked when they separated the sentient from the insentient world. This great step finds its fullest expression in the broad antithesis which we have denoted by the terms direct and indirect method, as applied to the efforts of sentient beings to attain their ends. In the world of feeling below man, these efforts have been made according to the direct method alone, and have succeeded only in accomplishing the maintenance and perpetuation of life. Progress has here been due to other causes, chiefly to the various kinds of adaptation or selection: but in man the indirect method was early applied, and while in certain cases, in consequence of error and ignorance, it had a reactive effect, and brought about gradual degeneration or speedy destruction, in others it proved progressive, and with greater or less rapidity elevated the condition of the race.

The immediate result of the application of the indirect, or intellectual, method was the introduction of a large number of purely human institutions, or devices for attaining desired ends, which in their most general sense we may denominate *arts*.

While considering the various "modes of acquisition" in Chapter VII (vol. i, p. 524), it was shown that intellectual operations rest fundamentally upon a quality which, when directed toward objects capable of feeling, takes the name of *deception*. Such recondite truths are sometimes exemplified in an interesting manner by the natural history of words.

The word *art* furnishes a case in point. Applied to inanimate objects it sounds harmless enough, but observe the difference when applied to animals or men. In its derivative, "artful," we have the same general conception as in "artificial," except that acts to which the former may be applied refer to things which can suffer, while those to which the latter is applied are feelingless.

We may perceive from such illustrations that the idea underlying the word *art*, and present in all its applications and derivatives, is the essential, distinguishing principle of purely intellectual action. Therefore, all the productions of purely intellectual effort may in this general sense be denominated arts. And now the additional truth must be formally set down that, while certain arts are devised in ignorance and error, and result in the subversion of progress, the greater part of them are conceived in a sufficiently true appreciation of the nature of the force which they seek to control to succeed in their purpose, and result in securing a greater or less degree of material and social advantage, rendering them progressive. This may be illustrated by the history of human invention, which is simply a branch of human art, and constitutes the department of it which most perfectly elucidates the true character of all forms of artificial operation. For even here a great many devices fail to accomplish the objects expected by their designers, and some prove productive of harmful effects.

Now, while the present state of society has been brought about through the operations of a general tendency inherent in human nature, yet this general tendency has in turn been due to certain specific causes. The end, progress, has been achieved through the instrumentality of certain means without which it could not have been achieved. These means consist in the various forms of art of which we have spoken. These forms of art, therefore, constitute the more definite objects of study in any inquiry into the conditions of human progress. They differ greatly in their general character, and many of the most important of them deviate so widely in their external characteristics from the normal type that they are not recognized in common parlance by the name of arts. Some of them are vaguely denominated *institutions*, or *agencies*, while others are so universally regarded as *sui generis* that there is no generic category to which the language can refer them. As already remarked, these various artificial devices of the human intellect may be primarily divided into two general classes—those belonging to one of which are upon the whole progressive, while those belonging to the other are upon the whole non-progressive.

At first sight it would seem that this division would be an obvious one and easily drawn, but such is by no means the case. Of course, all were originally intended to be progressive; at least, were intended to benefit those who designed them, and probably those that survived the earliest stages of trial so proved. But it would not necessarily follow that, because they benefited the designers, they were therefore progressive. Hence, they might long survive and benefit their designers, while all the time injuring the rest of society. If such injury were unmixed with benefit, however, it would seem impossible for them to survive long, as they would soon inevitably react to the ultimate injury of the designer also. Indeed, if their general effect were more evil than good, this reaction must ultimately come, but, where marked benefits accrue along with greater evils, it is easy to understand how, in the cloudy state of the undeveloped reason, inability to balance the good and evil might result in their perpetuation for long periods against the general interests of society. The good effects may be cunningly designed to manifest themselves in a striking manner, while the far greater evil effects may be insidious and imperceptible. Few realize how great is the susceptibility of man to error in the lower stages of his development. Those who have fully recognized this will readily understand how a cunningly devised artificial system may be regarded as a blessing for ages, during which it is in reality degrading its defenders. As a concrete example, which comes near enough home to be readily comprehended by all, let us instance the institution of chattel slavery as it existed in the Southern United States prior to the war of 1861. If so great self-delusion is possible in an enlightened age and nation, how much greater self-delusions may not have been possible in the dark stages of barbarism and savagery!

It will therefore be seen how difficult must be the task of distinguishing the progressive and non-progressive institutions which men have established in society. Many of them are so complicated in their effects that the wisest men of the world differ diametrically upon the question of their utility.

It will be impossible, as it is quite unnecessary in this brief sketch, to consider all these varied human creations in minute detail. The ephemeral ones, whose general injuriousness has so distinctly manifested itself as to have already resulted in their suppression, must be passed over in silence. Numerous comparatively unimportant ones, to whichever class they may belong, must also be disregarded. Only a few of the great types of each class, whose existence has been co-extensive with the known history of society, and whose effects are still making themselves felt in our age of the world and in the most advanced societies, can receive special consideration at our hands.

Before enumerating the examples which will be selected as best furnishing a basis for the general discussion of the conditions to social progress, it will be necessary to remark that the popular view of the relative influence of the different social agencies is even now extremely crude and unphilosophical. It is in a high degree superficial, and is in the main based upon certain external and obtrusive characters which are misleading and deceptive. It is not too much to say that the majority of mankind ascribe all human progress to influences as to whose progressive character the deepest thinkers are in doubt, while the truly progressive agencies, universally recognized as such by all who have thought deeply upon the subject, are almost wholly ignored. Considerably more than one half of mankind, if asked what they regarded as the chief civilizing agency, would doubtless unhesitatingly answer, "Religion." Yet a single additional question would quickly reveal the fact that by "religion" each one means "my religion" *; for all without exception would agree that all other religions than their own were not only non-progressive but retrogressive in a high degree. This would be equally true of Buddhist, Mohammedan, or Christian. What, then, are disinterested spectators to conclude? As between that which all declare to be true and that which only one declares to be true, the chances, so far as testimony goes, are of course in favor of the former. If the question had no intrinsic merits, or if none were known to the inquirer, he must, if logical, conclude that all religions are non-progressive.

Again, if asked what human institution ranked second in the services it had rendered to civilization and progress, an equally large majority would probably reply, "Government." But, aside from the consideration urged in the case of religion, which here shows itself in the fact that most nations regard their own precise form of government as immeasurably the best, and all others as little better or far worse than no government, we have history to teach us to how very great an extent government in all ages has burdened and oppressed

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* Tylor, "Primitive Culture," Boston, 1874, p. 420.

the human race; while in those governments which rest most lightly upon the people, as the representative and strictly *laissez faire* government of the United States, where *caveat emptor* prevails, and the unrestricted power to adulterate the people's food for gain is guarded as an "inalienable right" —even in such governments the political party which happens to be in the minority, if by only a few thousand votes, and hence out of power, is constantly charging oppression, and declaring the government worse than anarchy.

In view of all this, the disinterested philosopher must certainly be pardoned for concluding that governments, as human institutions, have not been unmixed blessings.

On the other hand, how few, outside of the deep-thinking classes, adequately value the services of language, literature, the mechanical arts, and the exact sciences! These are the really progressive agencies of society; yet their influence is so gentle and unostentatious that they are overlooked, and credit for their results is given to those agencies which employ the direct method, and herald their march by loud appeals to sympathy and passion.

Such being the nature of the subject before us, it is deemed the most suitable plan to consider, first, the more fundamental and legitimate civilizing agencies, and to show in what consists their really progressive character as measured by the standard adopted in our definition of progress; and afterward to investigate the claims of government and religion to their share of the credit for whatever advance has been thus far made.

Before entering fully into this specific line of inquiry, however, it will be necessary to make a few preliminary and explanatory remarks.

A word, first, in justification of the definition of progress given above. Progress in its general sense, or improvement, implies an approximation toward perfection. As applied to unorganized matter, it denotes that state of development which material objects undergo through the agency of the physical forces. There is reason, for example, to suppose that the solar system has been for an indefinite period passing through successive stages of a gradual development, supposed to have originated in a comparatively chaotic mass of nebulous matter, and gone on till at this particular stage it presents the appearance of a number of spheroidal bodies revolving regularly about their common center of gravity.

So, also, the constitution of the earth, and, by analogy, that of all worlds, may be said to be in a state of progress, although it may well be doubted whether all their internal changes result in a body more symmetrical than before they took place. But there may be many different standards of perfection. If any planet, for example, could be shown to have once been habitable, but to have now passed, in the course of its transformations, into a state incapable of supporting life, some might conclude that its progress had ceased, and the opposite, or a degeneration, had begun. Still, it might be at the same time growing more dense, more shapely, and more regular. And this question will meet us everywhere in the inorganic world. For, if a stone crumble into dust or a sand-heap solidify into stone, who shall say which is the more perfect condition? It is clear that development, or progress, in unorganized matter is relative to the party judging, and depends upon what he considers perfection to consist in. The farmer would consider the rich loam into which the rock had crumbled a far superior condition, while the geologist would most admire the stratified ledge in which he could read the history of the past. Still, it is popularly supposed that all nature is progressing toward some standard of perfection, of the character of which man is not in a position to judge with any degree of accuracy; an idea which is purely speculative, illy substantiated by what we know of nature, and rather opposed by the established doctrine of the persistence and indestructibility of both matter and force which always must have the same quantity. The case is different with organized matter. For here, even in the vegetable world, we find a certain adaptation to the two ends of nature before alluded to—the individual and the specific existence. We hesitate not, for instance, to declare an exogenous superior to an endogenous plant, because we see that the former is better protected by having a firm trunk to sustain it against cold and external attacks. We say, therefore, that there has been progress in the vegetable kingdom since the carboniferous age, at the beginning of which no evidence can be found that any exogenous plants existed, and during which the gymnosperm, the lowest type of this class, was all that had been brought forth, while now our forests abound in oak, beech, birch, and maple, and cryptogamous and monocotyledonous plants occupy a very inferior position in the vegetable world.

When we come to animals, the progressive principle is clearly discernible. The relative perfection of animals is no longer confined to their respective powers of endurance or security of perpetuation, but lies also in immediate connection with their peculiar characteristic as sentient beings, capable of enjoying their own organisms. Therefore, that organism is, in general, most perfect which possesses the greatest variety of parts, on the principle that every normal movement yields pleasure, and that pleasure is increased as the facilities for activity are rendered more extensive and varied.

Therefore, it is fairly established that on the whole there has been progress in the animal kingdom throughout the geological ages of the earth, because each successive age has produced some beings of a more varied and elaborate organization than those of the age preceding it.

While, therefore, in the animal as well as in the vegetable kingdom, there still exist forms and species as low perhaps as any that ever existed even at the beginning, still there has been progress, because, while these lower forms continue to exist the same as then, yet the highest forms now in existence are infinitely superior to the highest forms in those remote ages, and in some respect superior to the highest of any preceding age.

But, as we look over this subject, we can not fail to be struck with the fact that this progress has not been so much due to the individual efforts of species as to external circumstances, viz., physical changes taking place in the earth, occasioning differences in the shape of the surface, in the temperature, and in the quality of the atmosphere and of the water. It is not so much a development of species as the evolution of new species under the operation of what we may call the law of *favorable conditions*, according to which new and superior species have successively made their appearance as fast as the terrestrial transformations would permit. For instance, no land animals could of course appear until there was land on which to dwell, and that did not exist to any extent till two great geological ages had gone by. Nor could these then exist (since all land animals must be air-breathing animals) until a long and luxuriant vegetation had extracted the superabundant quantities of carbonic acid from the air and buried its carbon in the earth, liberating its oxygen to purify the atmosphere (vol. i, p. 272). These conditions must first be fulfilled before the higher types could be brought forth.

Thus we see that this progress in the animal world is due in the main to a corresponding progress in the physical conditions of the earth. And this enables us to make the first grand division of the subject into that progress which is due to external causes, or objective progress, and that which is due to special efforts of individuals, or subjective progress.

The former of these divisions belongs properly to astronomy, geology, and botany. The latter belongs in the main to zoölogy, and in so far neither has more than a collateral bearing upon the question before us. But, if we scan closely this latter branch—namely, that part of the progress of animal life which has been produced by the special efforts of individuals—we may observe that it is capable of a further subdivision into two branches. One of these leads to the consideration of the development of species by "natural selection," whereby, through the unremitting and almost desperate efforts of every individual of every species to overcome the obstacles to its existence, great and radical changes have been wrought in the habits, character, and morphology of species.

The other branch of this inquiry, which it is impossible wholly to separate from the first, takes cognizance of the immaterial part, and shows what influence mind exerts upon the animal world in promoting its advancement.

The remark may here be made that the influences of external circumstances and of physical effort are not always such as to advance the species. On the whole, there has doubtless been progress from both these influences, but there have been periods of retrogression from unfavorable conditions, and perhaps degeneration of species by periods of superabundant supply and exemption from necessary exertion.

When we reach the plane which man occupies in the animal world, these laws of adaptation, selection, and survival, while they are not altogether superseded, and perhaps operate as powerfully as on the lower creatures, nevertheless become of comparatively small importance in consequence of the vastly more potent influences due to the development of the intellectual faculty which operates according to the indirect method. The progress which man has made, though from any absolute standard it may appear slow and even secular, is nevertheless, as compared to that which is brought about either by cosmical alterations in the environment or by the law of adaptation, or direct and indirect equilibration,* extremely rapid; as much more rapid than that which results from the biological laws just named as this is more rapid than that which results from the cosmical laws (vol. i, p. 477). This progress, too, is effected in spite of the frequent disastrous conflagrations which ignorance and error occasion by a perverse use of the Promethean fire (*infra*, p. 287).

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* Spencer, "Principles of Biology," vol. i, chaps. xi and xii.

Biological progress, which consists in increase of structure, must, as before shown, result in increase of pleasure. Anthropological progress, too, which is the result of the conscious pursuit of pleasure, must attain the object of pursuit.

It was shown in the preceding chapter that happiness is both the motive of every particular action and the ultimate end of all action. It follows that there can be no improvement of man's condition unless it tend to secure that end. Human progress may, therefore, be properly defined as that which secures the *increase of human happiness*. Unless it do this, no matter how great a civilization may be, it is not progressive. If a nation rise, and extend its sway over a vast territory, astonishing the world with its power, its culture, and its wealth, this alone does not constitute progress. It must first be shown that its people are happier than they would otherwise have been. If a people be seized with a rage for art, and, in obedience to their impulses or to national decrees, the wealth of that people be laid out in the cultivation of the fine arts, the employment of master artists, the decoration of temples, public and private buildings, and the embellishment of streets and grounds, no matter to what degree of perfection this purpose be carried out, it is not progress unless greater satisfaction be derived therefrom than was sacrificed in the deprivations which such a course must occasion. To be progressive in the true sense, it must work an increase in the sum total of human enjoyment. When we survey the history of civilization, we should keep this truth in view, and not allow ourselves to be dazzled by the splendor of pageantry, the glory of heraldry, or the beauty of art, literature, philosophy, or religion, but should assign to each its true place as measured by this standard.

In considering man's peculiar characteristic as a progressive being, and in how far he really is a progressive being in any other sense than all animals are progressive beings, it will not do to omit the important fact that it is only a part of the human race, and a comparatively small part, that contributes at all to this result. By far the larger part of the race, as it now exists, considered as nations and peoples, are making little or no intellectual progress, but are and have for ages been in a condition in this respect akin to that of animals; while in those nations where civilization is advancing, the great majority contribute absolutely nothing to its advancement, simply performing the functions of animals, viz., those of maintaining their own existence and perpetuating their kind: a very few, the mental and material investigators of things, originate every progressive institution. It is to these few only that all artificial progress in society is due.

It is claimed by some that, if we accept this definition of progress, viz., the increase of human happiness, it will follow that there has never been any progress at all. For they say that civilization, as it has existed among nations, has not had the effect to increase happiness, but rather to diminish it; that the happiest condition in which mankind can exist is that primitive, unconventional state which precedes all efforts at civilization, and allows nature to take its course; that the humblest peasant, dwelling in his Arcadian retreat, and ignorant of the vicissitudes of life amid the scenes of a high and giddy civilization, is more happy than the nervous pursuer of fortune, fame, or knowledge.[*]

It can not be denied that civilization, by the many false practices which it has introduced, by the facilities which its very complexity affords to the concealment of crime, and by the monstrous systems of corruption which fashion, caste, and conventionality are enabled to shelter, is the direct means of rendering many individuals miserable in the extreme; but these are the necessary incidents to its struggles to advance under the dominion of natural forces alone.

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[*] Jean Jacques Rousseau and other writers have maintained this view, and it is so strongly defended by one of the characters of Disraeli's "Lothair" as to justify a suspicion that it was the view of the author. Fénelon ("Télémaque," liv. viii), in the account that Adoam gives of the inhabitants of Bætica, reflects the same sentiment with great force and clearness. See, also, Comte, "Philosophie Positive," vol. iv, pp. 60, 239.

It would involve a great fallacy to deduce from this the conclusion that civilization begets misery or reduces the happiness of mankind. Against this gross but popular mistake may be cited the principle before introduced, which is unanimously accepted by biologists, that an organism is perfect in proportion as its organs are numerous and varied. This is because, the more organs there are, the greater is the capacity for enjoyment. For this enjoyment is quantitative as well as qualitative, and the greater the number of faculties the greater is the possible enjoyment derivable from their normal exercise. To say that primitive man is happier than enlightened man, is equivalent to saying that an oyster or a polyp enjoys more than an eagle or an antelope. This could be true only on the ground that the latter, in consequence of their sensitive organisms, suffer more than they enjoy; but if to be happy is to escape from all feeling, then it were better to be stones or clods, and destitute of conscious sensibility. If this be the happiness which men should seek, then is the Buddhist in the highest degree consistent when he prays for the promised *Nirvâna*, or annihilation. But this is not happiness—it is only the absence of it. For happiness can only be increased by increasing the capacity for feeling, or emotion, and, when this is increased, the capacity for suffering is likewise necessarily increased, and suffering must be endured unless sufficient sagacity accompanies it to prevent this consequence. And that is the truest progress which, while it indefinitely multiplies and increases the facilities for enjoyment, furnishes at the same time the most effective means of preventing discomfort, and, as nearly all suffering is occasioned by the violation of natural laws through ignorance of or error respecting those laws, therefore that is the truest progress which succeeds in overcoming ignorance and error (*infra*, Chapter XIV).

Human progress is, therefore, perfectly analogous to that progress which is going on in the world of animal life, since both consist in a multiplication, variation, and refinement of the faculties of enjoyment, and any change in either which does not effect this is not progress. All happiness consists in the gratification of desire. Every faculty experiences a natural want to be exercised, and that want is a desire. The proper exercise of that faculty is the supply of that want and the gratification of that desire. There are two ways, therefore, by which the happiness of a being can be increased: first, by affording the opportunity for exercising existing faculties; and, second, by the creation of new and additional faculties, and extending these opportunities to the exercise of these also.

By the law of development alluded to, and which is a sort of biological law of supply and demand, the mere presence of these opportunities is all that is required to create the faculties themselves, for this renders the conditions for the existence of such faculties favorable; and, where the conditions are favorable for the development of a faculty, that faculty will arise; when the opportunities for the exercise of a faculty cease, that faculty will itself cease to exist, although the organs through which it was exercised may long persist.*

This law extends with full force to the social condition of man. Whatever affords an opportunity for the exercise of a new human faculty creates such a faculty, creates a desire for its exercise, and actually gratifies that desire, thus adding to the sum of human happiness. The creation of such opportunities is, then, the origin of progressive action, and it is these same opportunities, increased and refined, that keep that desire in existence, and increase its intensity. Therefore, we may enunciate the principle that progress is in proportion to the opportunities or facilities for exercising the faculties and satisfying desire.

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* Spencer, "Data of Ethics," pp. 183-186, and 263 (§§ 67 and 102).

PROGRESSIVE AGENCIES.

In all the departments of life, the faculties are perpetually crowding the opportunities. All organisms, by their inherent tendency to develop, are constantly pressing upon the environment. The organ is always in excess of the function. Gratification is never equal to desire. There is a permanent residuum ever striving after more complete satisfaction. In the animals below man, a great degree of correspondence is generally established, but never so great but that the least giving way of the wall of circumstances by which a species is surrounded results in an immediate advance of the species to occupy the ground yielded. This truth is forcibly exemplified by all the phenomena which the domestication of animals and plants presents. In nature they are in a state of equilibrium, each aiding the inorganic conditions to keep all others in their existing state. Human interference disturbs this equilibrium, selects one, and protects it from the influence of the rest, improves the inorganic conditions, and gives free scope to the forces in excess which reside in every species; whereupon development becomes rapid, and is only arrested when brought again into conflict with adverse elements upon a new and higher plane of life. This power to advance in structure as fast as opportunities are offered is due to the original and universal *nisus* of the life-principle itself, and rests fundamentally upon the peculiar characteristics of the primordial life-substance—that remarkably unstable, restless, and, as it were, dissatisfied form of matter—protoplasm. The never wholly satisfied desires of sentient beings are but the modes of manifestation of this fundamental tendency in the higher forms of life. With the progress of cephalization, the manifestations of uneasiness and dissatisfaction become more pronounced, and the attempts to break through environing barriers more successful. But not until it has advanced so far as to admit of the substitution, to however small a degree, of the indirect for the direct method, does this success become complete, and the emancipation of the creature take place. This stage is reached only in man, and the progressive tendency can thenceforward only be traced in him. But even in him no degree of development is ever reached in which there does not still perpetually remain an excess of desires over gratifications, a multitude of wants unsatisfied. The faculties still continue to crowd the opportunities, organic vitality presses upon functional exercise, reproduction encroaches upon nutrition, population trenches upon the means of subsistence.

Social contact occasions mutual dependence, and renders a means of communication a paramount necessity.

Taking into consideration all the varied wants which must have existed at the inception of human society, we may conveniently arrange them under two great groups, which will then be denoted in the most general manner by the two words respectively—

1. Communication.
2. Subsistence.

Not but that the race had enjoyed some degree of ability to communicate together prior to the stage of development mentioned, but only that it was at this stage that there arose the necessity for greatly increased faculties in this direction. And, as regards subsistence, it was then, too, that it became essential to augment the supply far beyond that which unaltered nature yields to the ordinary methods by which animals secure it.

By following the history of the human race from that stage to the latest and highest yet reached, it will be perceived that it has been along these two particular lines that progress has always moved, nearly every recognized step having consisted either in increasing the facilities for the intercommunication of ideas among men or in augmenting their power to extract from nature additional supplies of the necessaries of life.

I. COMMUNICATION.

The art of communicating ideas possesses an interesting history, of which we can here only sketch the outline. It may be said to consist of four successive periods, each marked by a new and peculiar application of the indirect method—by a grand discovery whose reduction to practice constituted it a true invention of the intellect.

The first of these steps, and that which most closely resembles a simple process of nature, is *language.*

It is important to distinguish between language and speech. Language is the product of thought. Speech is only the mode in which language presents itself in man, who happens to possess the organs which render it possible. Had he lacked these organs, he would still have possessed a language. Had the human race been as silent as are all the forms of life below the amphibians, there would still have existed a mode of intercommunication. In fact, along with speech there is found to exist—widely diffused throughout the less developed societies and sending some of its branches up through the more developed ones—another and parallel form of intercommunication, known as *gesture-language*, which, for many of the purposes of these peoples, possesses advantages over the method of communication by sounds.

In one sense, the faculty of *oral speech* must be regarded as a physical development, since along with it there had to be developed a physical organ, the larynx. But, in the first place, this organ exists in lower animals, and the morphological alteration which it undergoes in the passage from the ape to man is very slight. As shown in a previous chapter (vol. i, p. 438), the power of articulate speech has chiefly been acquired by the exercise of the rational faculty. Idiots are often unable to speak, although possessing all the organs of other men. They lack the degree of intellectual power necessary to learn to speak. This is, doubtless, the true reason why animals in general have no better means of intercommunication. Vocal sounds they do, indeed, in many cases utter, and these generally have a definite though very simple meaning. To call their mates, to sound an alarm, to cry from pain, and a few other purposes, exhaust the animal vocabulary. The extension of this vocabulary, to so great a degree that those within hearing can be made acquainted with one another's thoughts, constitutes an immense advance, and, although not generically distinct from the advance already made, is practically a new development, and marks an epoch in evolution. To acquire this power and inaugurate a systematic language, however rude at first, constitutes an art involving the application of the indirect method. For the direct method is connected with the indirect by imperceptible gradations, and is not an abrupt step forward, independent of antecedent steps. To invent a language required a certain degree of ingenuity, which may be regarded as the simplest and most typical form in which the intellectual faculty manifests itself. This is not the less true if we admit, as we undoubtedly must, that language was the result of slow development. If the term *invention* could only be applied to discoveries suddenly made, with nothing which preceded and suggested them, then would there be no use for such a term. For all inventions, even those made in advanced societies, prove, upon examination, to rest upon a long series of antecedent steps gradually leading up to them. The popular error respecting the abruptness of inventions is paralleled, with regard to language, by the various myths of early races respecting the origin of speech, the confusion of tongues, etc. Language, though of course in a less clearly defined sense, is as much an art as architecture. It has been the product of thought, sagacity, ingenuity. It grew up from earlier steps in the same manner that modern arts have grown up. The prevalence of onomatopœia in early languages points to one of the most important natural bases upon which it rests. From the use of a sound to represent a thing with which the sound is directly connected, to the use of sounds without such natural connection, is a step easily adopted, perhaps, but nevertheless requiring the exercise of a certain degree of intellectual acumen, and the recognition of abstract relations.

The pressing need for some means of intercommunication sufficiently accounts for the development of language. With the advance of brain-mass and brain-structure, there grew up ideas and thoughts. These demanded expression, and this demand constituted a new set of desires. The same influence which created these new desires furnished the faculty whose exercise devised the means for their satisfaction. Thought was not content simply to struggle for expression. It applied the indirect method. Unable to think in such a manner as to convey the nature of the thought directly to other minds, it devised means by which its character could be manifested through the physical organs of the body in such a way as to affect the senses of others, and be conveyed through these to others' minds. Language, therefore, whether consisting of visible or audible symbols, is essentially in the nature of a device—an art.

We are next to inquire whether language can be regarded as a progressive art, measured by the standard of our definition.

To answer this question, we need only consider its essential nature as above set forth. Progress consisting in the increase of the sum total of enjoyment, which in turn is altogether the result of satisfying desire, it must follow that, if language really succeeds in the object for which it was designed, and supplies in any satisfactory degree the demand of thought for expression, and of the race for a means of intercommunication, it must secure, to the extent of that success, the ultimate end, and take rank as a progressive art. That such is the case, none will probably find reason to question.

The next great invention belonging to this class was *written language*, which came to supplement gesture and oral language. This invention must be regarded as a continuation of the series of steps which man had begun to take toward securing a mode of intercommunication with his fellow-man, of which gesture and oral language were the primary results. Thus far he could convey his thoughts with various degrees of ease and accuracy to those present or within the sound of his voice at the time they were uttered. But he could not be expected to rest for ever satisfied with this alone. The daily necessities of war and the chase, and even of the more simple operations going on in primitive society, would suggest the use of marks made upon convenient objects that should be intelligible to others.* From these were developed the first rude forms of written communication. The earliest of these forms consisted of pictorial representations, to which succeeded simple ideograms. It seems most reasonable that men should have first taken such symbolic representations of real objects as their means of conveying their ideas, and, so far as these early antiquities have yet been discovered and deciphered, they seem to bear out this presumption, with a few apparent exceptions, which may be explained by supposing those records, where they occur, to have been made in a somewhat advanced stage of the art. This primitive writing consisted largely of inscriptions upon the monuments of deceased kings. These embraced little more than names, titles, and dates. At length in Egypt it began to appear upon the walls of temples, upon obelisks, and upon the faces of pyramids. The arrow-head writing of the Assyrians was very different in its characters, but analogous in its design. At length books began to be made of the papyrus and filled with hieroglyphics. In China, India, and Phœnicia, too, books finally came into use written with different characters, but mostly symbolic, and containing the primordial conceptions of the human mind, generally in the nature of cosmogonies or theogonies, and afterward of national histories, chronicles, and codes of law. Symbols at length gave way or became abridged and reduced to arbitrary characters and phonetics, constituting alphabets of true literal characters, or letters.

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* Pictographs of various kinds are used by many races of men having no literature or alphabet proper, and it is probable that under favorable conditions any of these systems might develop into something higher. But there seems no probability that any of them will ever do so now, in consequence of the advantage which systems already perfected possess over them, and the universal tendency in language, as in all other forms of culture, of the systems first perfected to swallow up all nascent systems. Account is here taken only of the principal line of development, which has resulted in the production of the actual literature of the world.

It would not comport with the character or the scope of this sketch to trace all the minute gradations, improvements, and refinements which this new mode of conveying thought underwent during its infancy; and, indeed, there were then so many distinct peoples, each having a language totally distinct from all the rest, that it would be useless to attempt an analysis or a history of them. Suffice it to say that an alphabet was the result in each case, and its invention or introduction, whether abrupt or, as it doubtless always was, of gradual development, may be said to form the second great era in the progress of intercommunication. Manuscripts at length became abundant, and an entirely new impetus was thereby given to human thought.

Thus, the means of communicating ideas to others when present, or to those at a distance, or to future generations, had been provided, and at this stage progress rested for many centuries. But in Europe, after a dark period of religious intolerance and the combined influences of barbarism and ecclesiastical interference with the literature which had accumulated during Grecian and Roman civilization, in the course of which the schools of philosophy had been suppressed, the books condemned, and the libraries destroyed, light at length dawned in the religious world, and a new season of mental activity set in. The summary destruction of the manuscript literature of the past established the conviction that something more permanent was necessary, while the laborious task of transcription, which had confined learning to the wealthy few, raised a demand for a more universal medium for the transfer of knowledge.

The last of the four great inventions, that of printing, supplied this demand. With the assistance it received from this event, literature became clothed with new powers. By furnishing facilities for bringing their ideas before the public, it inspired men to write very much more than they otherwise would have done; by placing books in the hands of a far greater number of persons, it aroused the talents of a proportional number into action, and these in their turn kindled new fires of thought, and awakened the world to a sense of the importance of making intelligence universal. Schools again came into being, knowledge began to be classified and systematized, education in its true sense for the first time began to be sought and conferred. The works that were written, instead of being allowed to perish, without hope of restoration, were multiplied and scattered broadcast every-where. Immense libraries accumulated, universities sprang up, and finally the publication of periodicals and of newspapers placed the facilities of information within the reach of all who could read. And thus by the aid of art, which by preceding it and evolving first the alphabet and afterward the printing-press, the agency of literature was enabled to attain its present efficiency.

It seems an unnecessary task to prove that the form of civilization which written language has produced has contributed to the substantial benefit and the true progress of man. The advantages which it has afforded him in the single direction of increasing his facilities of intercommunication have alone added immensely to his enjoyment. For, while speech confined that intercourse to the *now* and *here*, letters have extended it indefinitely both in time and in space.

An equal if not greater advantage still is that which arises from the increased facilities they have provided for preserving the remembrance of events that have occurred, and deeds that have been done. There is, perhaps, nothing which so greatly improves man's condition, in both a national and a social point of view, as a true and faithful record of the past. For, with such a record, or history, it is not only possible for nations to correct, avoid, and prevent their errors, but in fact they actually do so to an extent which it is difficult fully to appreciate, since in a majority of cases they do it unconsciously. Indeed, the want of a history is one of the chief causes of the long stagnation of nations that have no literature, because to them the past is a blank without precept or warning. It is true, they have traditions, but it may be well doubted whether these are of any benefit, even if they are not a direct injury, to such nations. For legends and traditions always become magnified as they grow old, and thus come to be not only useless, but often extremely mischievous in perpetuating the very errors which a true history would dispel. Great men become first heroes, then gods; events are exaggerated more and more till they become wonders and miracles, and all truth is eventually lost; while there is left in its place only a huge mass of grotesque fancies and absurd superstitions, which fetter the mind and enslave the body. Considering all this, therefore, the value of written records can not be overestimated, looked at from the point of view of their influence on human progress.

Again, literature has exerted a strong progressive influence in the assistance it has rendered to both language and art. Language is necessarily rude and imperfect until it becomes capable of being written. Before this, it does not admit of cultivation. There can be no success in attempting to reduce it to rules; and, without rules, it is harsh and incapable of refinement. But, when written, it improves rapidly, and soon becomes capable of expressing the nicest shades of thought and emotion. Thus, men are, as it were, admitted into one another's habits of thought, and no longer obliged to keep within themselves those higher sentiments which all refined minds experience. Moreover, this utterance of ideas begets new and higher ones, and thus cultivates the finer feelings.

Literature has also assisted art, as it has been seen that art has assisted literature. It was by its aid that art was gradually elevated and perfected. Not only did this take place in consequence of the improved tastes which men thus acquired, but also by the opportunities which literature afforded for training and instruction in the department of the fine arts especially, and also of the useful ones. Art was thus reduced to written rules, which could be applied by all, and thus brought to a high state of perfection.

But all these considerations, though weighty in themselves, are perhaps of less consequence than the pleasures of the mind, the enjoyment which results from intellectual activity as aroused by literary pursuits. Some degree of interchange of thoughts was secured by oral language. Men could acquaint their comrades, their friends, and their own families, with the thoughts which were temporarily flitting through their minds. But the intercourse was limited. They could even convey instruction, but only to those present. Some of the greatest moralists and philosophers, as Christ and Socrates, have promulgated their doctrines in this way; but, unless some disciple had reduced them to writing, they could not have been preserved unchanged and unadulterated for a single generation. Even in the two cases mentioned, there are grave doubts as to the authenticity of many of their recorded utterances. Still, we are able to-day, through the medium of letters, to commune with the intellects of past ages, to compare the minds of the present with those of any given period. By the aid of letters, one mind can convey instruction to thousands of others at indefinite distances, and for thousands of years after the writer's death. Thus, a few are enabled to furnish information to the whole world, and nothing is needed but a successful plan of dissemination to make it possible for every adult person to possess a knowledge of every important truth which is known to any other person. Nothing gives so high a degree of pleasure, or pleasure of so deep and intense a nature, as the acquisition and conscious possession of knowledge. As, of the five recognized senses, the ear and eye are the two which afford the highest and purest pleasure, so the brain must be regarded as an organ of sense of an order still higher, and capable of affording the highest quality of enjoyment. And it is observable, as proving the homogeneity of all the faculties, that this organ, the brain, derives its pleasure from precisely the same conditions as do the others, viz., its own exercise. Acquiring knowledge is the same thing to the brain that seeing is to the eye, hearing to the ear, or tasting to the tongue. The brain is also equally capable of pleasant or unpleasant sensations, according to the nature of the object producing them. The pleasures thus derived differ from those derived from the exercise of the lower senses in the same manner as the latter differ from one another, in the additional respect of being more exempt from injury to others. The lower animal senses are often exercised and enjoyed at the expense of the happiness of others; those of the eye and ear are less subject to this restriction; while it is difficult to conceive of an instance where an exercise of the mind, the learning of a fact or a truth, can of itself detract from the happiness of any other being. The pleasures of the mind are, therefore, in all respects the highest pleasures which we are permitted to experience. As these pleasures are created by the acquisition of knowledge, and since it is the especial office of literature to facilitate and universalize that acquisition, it follows that it is through this medium that man derives his purest enjoyment. Uniting, therefore, these direct streams with those consequential ones which so copiously flow from knowledge thus obtained, we have, as the result of the agency of written language, a vast current flowing in the direction of human progress, in the technical acceptation of the word.

Briefly to recapitulate, we have seen that in the great art of intercommunication, of which inchoate humanity felt such a pressing need, there have been made a series of discoveries in the domain of natural law, the application of which entitles them to the name of inventions. As is the case with even the most modern inventions, though perhaps to a somewhat greater extent, these several inventions were in the nature of gradual growths, whose process it is impossible to trace except by the eye of the imagination, but whose successive consummations stand out boldly against the background of history, and mark a corresponding succession of eras in the progress of this important art. These eras first divide into two, the era of unwritten and the era of written language; but each of these subdivides, and we have for the history of language the four more or less independent and successive periods, viz., those respectively of gesture-language, oral language, written language, and printed language.

Each of these has been the result of an ever-increasing degree of brain-power, of the objective department of the mind, the intellect, of that special application of this faculty called ingenuity, or genius, from which all the other intellectual manifestations are derived.

The incentive to the exercise of this faculty has been unsatisfied desires. The result of the successive inventions has been to satisfy those desires. They have therefore been progressive in the technical sense of the term. For, if we add to this series, as we are certainly entitled to do, the great modern arts of telegraphy and telephony, the means of intercommunicating ideas between man and man throughout the world are, to all intents and purposes, complete.

II. SUBSISTENCE.

We have next to consider the manner in which the desires, whose satisfaction is attained through a better supply of the means of subsistence, have influenced the progress of the human race. In a previous chapter (vol. i, p. 485), this general subject was treated somewhat in detail, but from an entirely distinct point of view. The nature of the Social Forces was then under consideration, and, although what were there denominated the "preservative forces" were shown to be identical with the desires above mentioned, still, the object was then simply to establish the existence of such forces and to prove their identity, in point of uniformity, reliableness, and susceptibility to scientific study and intelligent control, with all other acknowledged natural forces; while we have here to do only with the actual product of these forces after they have been subjected to the guidance of the intellect. In the former case, the total product, both progressive and non-progressive, was considered; in the present case, only a small portion of that product, the portion to which the indirect method has been applied, is taken into account. We were then studying these propelling influences themselves; we are now studying the directive influence which in various times and manners has enabled them to succeed where otherwise they must have failed. It is in this that progress really consists. The forces themselves are blind. Intelligence alone can light their path. Without it, however intense may be their degree, they must perpetually dash against immovable barriers which restrict their march. Multiplication must be constantly checked by premature destruction. Migration must be arrested by the annihilation of the emigrant or the infant colony. Subsistence, as provided by unaided nature, is limited, and life must be limited to correspond. The forces can not be extinguished; the desires must continue to press for satisfaction; but, in the absence of any *artificial* source of supply, equilibration must be speedily reached and progress must cease.

The means through which this statical condition has been disturbed, and a dynamic state preserved by the human race, is the agency which is generally known as *practical*, or *useful*, *art*. In order to distinguish it from that which is somewhat inappropriately recognized as art *par excellence*, or "fine art," let us call it *inventive art*, and the other *imaginative*, or *creative, art.*

It is somewhat unfortunate, perhaps, that two departments of mental activity, so remotely connected psychologically and sociologically, should have received the same name. Although we are here really little concerned with the latter, yet, in order to add somewhat to the symmetry of the general treatment of the subject, as well as to point out, once for all, the chief distinctions between them, for which a more appropriate place may not be found, a few words with regard to the true position of the fine arts may be justified.

It is obvious that inventive art rests primarily upon the preservative forces of society. It is directed almost exclusively to the satisfaction of the ordinary wants of mankind, which, as we saw, are all more or less completely reducible to the demands of nature for the three prime necessities—food, clothing, and shelter.

It is less obvious, but by no means purely fanciful, or maintained for the love of theory and system, that imaginative art rests primarily upon the other principal co-ordinate branch of the social forces, viz., the reproductive forces. When we consider to how large a degree all ideas of beauty are associated with the sentiment of love, and how closely all forms of love are related to sexual love, and this in turn to the sexual instinct, this at first perhaps somewhat startling proposition may meet with a qualified acceptance. Fully to appreciate whatever degree of truth it may possess, however, the present highly derivative and etherealized character of these sentiments as exhibited by the *élite* of mankind must be temporarily put out of the mind, and a mental image formed of the true character of those sentiments in undeveloped races, and also in the lower animals. Here we see the parental instinct disappearing more or less in the male and confining itself to the mother, in whom it is an acknowledged adjunct of the sexual system. Filial and fraternal affection also disappears, and the only form of love remaining is that of sex. The universal preference for the nude in art is undoubtedly in great part due to the vague but still influential charm which notions of sex add to the product. Nor is it to lower our estimate of art frankly to admit this, and to maintain that all classes of innocent emotion are equally pure.

Sculpture, the oldest of the arts, illustrates this truth most forcibly, and is closely followed by painting, which was originally confined principally to the delineation of the human form. Architecture, which unites the inventive with the imaginative, forms an exception, and, in its earliest as well as in its highest application, is more intimately connected with the religious sentiment. Music, however, though a late development, bears a clear relation to the romantic in human nature. Of poetry, it may be said that it has much closer affinities with the department of art that has the means of intercommunication for its object and literature for one of its boldest achievements, than it has with the practical arts proper, which we are now considering. Poetry is to language what the remaining fine arts are to the useful arts; yet its fundamental attachment to the sentiments derived from the development of the reproductive system is plainly shown in the almost universal connection of poetry with romance.

There is nothing dynamical in the influence of the fine arts. Enjoyable in themselves, and therefore sources of happiness, their influence is confined to the immediate present, and is incapable of contributing any permanent aid to social progress. Their study belongs entirely to the department of social statics, and this brief notice of them is merely intended to fix their true position and exhibit their negative character.

As was remarked at the outset, human art has advanced on two general lines—the one in the direction of securing better means of intercommunication, the other in the direction of securing better means of subsistence. The first of these divisions must be regarded as embracing the response of the developing intellect to the demands of the mind; the second, as its response to the demands of the body. In seeking a convenient subdivision of this latter branch of human art, it appears that, while its progress has presented a somewhat uniform movement without the several abrupt steps which are so conspicuous in the other branch, still there has been, in the history of those races which now occupy the most advanced position, an enormous acceleration within the last three centuries as compared with the same period at any previous time—far greater even than that which took place in the progress of letters under the stimulus of the epoch-making art of printing. This sudden swelling out of the stream, which had previously undergone only the normal increase due to its numerous tributaries coming in at irregular intervals and with varying volumes, has been so rapid and so vast as to constitute an historical if not a logical subdivision of the entire subject. Its cause, it is true, is not far to seek, and is found almost wholly in the application, since the middle of the seventeenth century, of what is known as the Scientific Method to the development of inventive art.

This fact confronts us on the threshold with the much-discussed and ill-settled question of the relation of science to art. It is this fact, too, that has lent the chief support to the view, which may be said latterly to prevail, that art precedes science; and in a certain sense this is unquestionably true. But the prevalence of this idea is unavoidably accompanied by a train of erroneous and, we may add, pernicious implications. It serves to keep alive the originally false conception of the meaning of the word *empirical*. If empiricism means—and this is what is maintained—the method by trial, depending on failure to detect error and on repeated trials to discover truth, then is inductive science, and especially all successful experimentation, purely empirical. For this is the special characteristic of the latter—that it depends upon successive trials of one hypothesis after another until the true solution is at last reached. Let us hear on this subject the views of one of the ablest and most successful experimenters that science has produced, whose right to speak *ex cathedra* upon it no one will question. Only a short time previous to his death (November 24, 1877), Professor Joseph Henry, in his annual address as president of the Philosophical Society of Washington,* thus described the true method of experimental research:

"The first step in the investigation is to reproduce the phenomenon; the next, is to form in the mind a provisional hypothesis as to its cause, and in the choice of this we are governed by analogy. For example, if it appears to resemble some of the phenomena of electricity, we *assume* that it is produced by electricity; we next endeavor to ascertain by what known action of electricity such an effect could possibly be produced; for this purpose we invent an hypothesis, or *imagine* some peculiar action of electricity sufficient to produce the effect in question; we then say to ourselves, If this be true, it will logically follow that a specific result will follow if we make a certain experiment. The experiment is devised and tried, but no positive result is obtained. In order to this negative result, the logical deductions must have been in error, or the experiment must have been defective, or the hypothesis itself erroneous.

"We examine each of the two former steps, and finding nothing amiss in them, we conclude that the hypothesis was not true; another hypothesis is then invented, another deduction inferred, and another experiment made; still no result is obtained. At this stage of the research, the inexperienced investigator is prone to abandon the pursuit; not so he who has successfully attempted to penetrate the secrets of nature. Undeterred by failure, he changes from time to time his hypothesis, makes new *guesses*, and again repeats the question as to their truth by means of experiment, until at length nature, as if wearied by his solicitations, grants him a new and positive result."

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* See "Bulletin" of the society, vol. ii, p. 164. In the citation given, the words that emphasize the position here taken are italicized, the Italics being Professor Henry's only in the first instance.

From this lucid exposition of the scientific method of experimentation, it must be clear to all that we have not yet reached a stage at which not only repeated trial but actual guess-work is not necessary to successful investigation. In the ordinary acceptation of the term, this is the very essence of empiricism.

What, then, is it that distinguishes science from empiricism?

It must be confessed that the only important characteristic which the former possesses, and which is absent from the latter, is the quality of being *systematic*. Science is methodical empiricism. Strictly speaking, science, as every one knows, is simply knowledge. More definitely, it is knowledge of the materials and laws of nature. In this wider sense it must precede art. Art is never the result of blind chance—of accident. It is always, however simple its form, the result of thought, of a recognition of the nature and reliableness of cause and effect, of the exercise of the inventive faculty in taking some advantage, however slight, of the natural forces. Even the least of such efforts, such as the selection of a well-shaped club from the broken sticks of a jungle, or the placing of fagots already prepared upon a forest fire, requires a degree of brain-power superior to that possessed by any wild animal. All the more essential useful arts were created long prior to the dawn of modern science, and each of these must have been preceded by a large amount of strictly scientific thought, accompanied by repeated trials of hypotheses, which were abandoned when unsuccessful, new ones being substituted, until success was attained. The method has always been the same as now, the faculty employed the same, the result the same. The real difference is that then every thing was partial and fragmentary; no whole field of knowledge had been mastered; the trials were all extremely specialized, and directed to the supply of immediate pressing wants. Empiricism may be called *intuitive science.* The laws comprehended are only the more obvious and superficial ones. With the deeper hidden laws no progress could at first be made, and all attempts to go below the surface of things resulted in failure. Hence, the arts were rude; but, fortunately, these rude arts were sufficient to give the race a complete supremacy on the globe. They consisted not merely in the ability to manufacture the appliances necessary to increase their means of subsistence, but in a higher degree in the skill acquired by their use, and in the pursuit of such means often wholly without artificial appliances. Mere cunning in securing such appointments and dispositions of occurrences known to be regular was an important quality of primitive art, and this, combined with labor in creating favorable combinations of circumstances, supplemented by that of devising the implements necessary to seize the greatest advantage of every thing thus, as it were, decoyed within reach, proved sufficient to multiply many hundred fold the normal supply of nature.

From very early periods this method in art was adopted and successfully directed against all the departments of matter and force. As all subsistence, at least all alimentation, must be derived primarily from the vegetable kingdom, either directly or mediately through the animal, human ingenuity was directed toward inorganic matter and the physical forces chiefly in the creation of such artificial appliances as were found necessary to perform the required service in the organic kingdoms.

The great diversity now known to exist among the various low races of men still inhabiting certain parts of the globe has greatly shaken faith in the chronological order in which early writers assumed that man had successively sought his subsistence, viz., the existence of the hunting, pastoral, and agricultural stages. That the hunting, and particularly the fishing stage, has been a very early one with many races, there can be no doubt, but there is reason, both in the facts of ethnography and in fair deductions from the character of those animals from which biology teaches that man must have descended, to suppose that a purely vegetarian stage may have been the one during which the transition to manhood was effected and the infancy of the newly evolved race was spent.[*] But this can not be supposed to involve an acquaintance with agriculture in any proper sense, though doubtless skill, ingenuity, and a certain amount of artificial labor must have supplemented the spontaneous productions of nature. It is certainly natural to assume that human skill, art, and cunning were directed to the killing and capturing, in various ways, of different kinds of animals and fish, upon which to subsist, before it was directed to agriculture or to the domestication of animals.[†] We scarcely find either pastoral or agricultural tribes among true savages, although the interior of Africa seems to furnish some exceptions to this statement. These modes of life are usually associated with the social state which we call barbarism, or with the civilized state.

The chronological order of the development of these arts, however, concerns us less here than their special character as aids to human progress, the relative quality and quantity of brain-power required to produce them. Clearly the chase is the mode of subsistence which requires the least display of genius. Cunning, in learning the haunts and habits of game, and in devising various snares and ambushes for its capture, must, of course, be exercised in a high degree, while true ingenuity is called forth in this stage in the invention of various weapons by which more effectually to secure it. These qualities, sharpened by the constant spur of want, must have wrought a rapid development of the faculties required to be put to service. And, as it is the same faculties which are called into exercise in all forms of artificial contrivance, the genius of an Ericsson may have been foreshadowed in the inventor of the bow and arrow.

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[*] "The hunter state, which Montesquieu placed the first, was probably only the second stage at which mankind arrived; since so many arts must have been invented to catch a salmon or a deer, that society could no longer have been in its infancy when they came into use" (Brand's "Select Dissertations," from the "Amœn. Acad.," vol. i, p. 118; also, in Encycl. Brit., 6th ed., Suppl., vol. iii, 1824). See, also, Oscar Schmidt on the stage of "Uncultur," in the "Deutsche Rundschau," for November, 1878 (vol. xvii, S. 279).

[†] Humboldt lays much stress on the fact that none of the American aborigines domesticated animals for pastoral purposes, notwithstanding the abundance of the bison, llama, and other native species, which have been proved capable of becoming very useful to man. Such as passed to the agricultural stage, therefore, must have done so directly from the hunting stage. ("Kosmos," Bd. II, S. 313, 314, note 15 to page 210; also "Ansichten der Natur," S. 9, 35, 101.)

In the taming of wild animals, and their reduction to man's service in various ways, a somewhat different set of faculties was exercised. A larger degree of foresight was required. The successful efforts very early made to improve the breeds of animals required considerable reflection, although a large part of the progress thus made was doubtless due to accident.

But, of all the primitive modes of subsistence, that of agriculture called forth the greatest amount of intellectual effort, and demanded the most foresight. Here the indirect method must be exclusively applied, and the discipline of waiting an entire season for the rewards of labor had a most wholesome influence upon the development of mind and character. A larger number of utensils, too, were required for this class of labor than for either of the preceding, which stimulated the inventive powers, and led the way to the extension of the practical arts to all the departments of life.

The power to multiply in numbers and expand in local territory, which the exercise of a superior intellect gave to man, also contributed greatly to stimulate the progress of art. For, in his wanderings, he must soon find himself exposed to climates quite different from that of his native abode. He must have shelter from wind and storm and from extreme cold. It is easy to see how great a sharpener of the wits subjection to such vicissitudes must be. In those countries where population is now densest, the natural protection from cold is very slight. To realize this, it is only necessary to contemplate spending a winter in some large forest remote from civilization. Admitting that there be an abundant supply of food, to how large an extent would it be necessary to depend for comfort upon artificial means of shelter? To secure such means must have cost primitive man much close calculation.

The invention of clothing, too, afforded a great stimulus to art, since clothing must be manufactured; and, although at first it consisted of the skins of animals or the leaves of trees, still, as men advanced farther from the equator and improved in skill, it gradually led to the manufacture of cloth, than which no one commodity furnishes a greater amount of skilled and useful labor, or a higher or more substantial gratification when applied to its various uses. In the ancient world the loom and the distaff were the special emblems of industry, a fact which shows how important an art the manufacture of cloth must have been. The houses were then very poorly constructed, and many nations even in temperate latitudes dwelt in tents. Clothing was made a substitute for houses. It is only in comparatively recent times that the carpenter has been placed on an equal footing with the weaver.

It is amazing to contemplate the meagerness of the real physical comforts which were enjoyed during all the centuries down to the commencemont of the modern epoch—the small extent to which iron was employed, the absence of glass for admitting light into houses, of paper for the transaction of business, of nearly all kinds of machinery, etc. The difference between the modern and ancient civilization in this respect is far greater than that which separates the latter from the most primitive state yet discovered among savages. The two epochs should, therefore, be considered separately. The modern epoch must be regarded as having been chiefly caused by the adoption of that systematic method of dealing with facts and phenomena which is distinguished as science, in contrast with the empiricism which underlay primitive art. A consideration of modern art, therefore, involves a review of modern science. The difference between man's early empirical applications of natural laws and his present analytical ones is not so radically great as might at first appear. For then he only knew observed effects—that is, phenomena—and phenomena are all he knows now. Still, the knowledge obtained by careful and thorough investigation and experiment has led him into a so much deeper, more minute, and more definite comprehension of Nature and her laws, that it seems to be a new and distinct department of human knowledge. It is not, then, so much the opening of a new channel as the widening and deepening of the old one. It is not so much the fact that men then began to discover truth as that they then learned a new and successful process for its discovery. It is not so much the quality of the truth evolved as the quantity which they have thus been enabled to evolve.

It is difficult to fix a period for the commencement of this era. There have been searchers after truth from the earliest ages, and every one who finds a truth is a scientific discoverer. From the times of Thales and Pythagoras, there have been many philosophers who delighted in the investigation of nature. In the fields of mathematics, astronomy, and natural history, considerable progress was made before the age of Bacon, Newton, Galileo, or Humboldt. Pythagoras, Euclid, Archimedes, ranged over a wide field in the domain of mathematics. Thales, Hipparchus, and Ptolemy went far in astronomy, while Aristotle and Pliny have left extensive treatises on natural history. Toward the close of the middle ages, not only was considerable interest again manifested in these departments of science, but the two sister sciences of physics and chemistry began to be sifted out of the chaff of demonism and alchemy. Still, in all this, little attempt was made by any of these writers to arrive at truth by investigation. They assumed truths, and with these they proceeded to elaborate other truths. These assumed truths were such as the popular mind universally or generally recognized, or such as a casual observation of things naturally suggested. For though, in the philosophy of Thales and others, an inductive method was pursued, yet the facts arrived at by this induction had never been put to a severe test by close inspection or elaborate experiment. It was, therefore, even inferior to those other systems which did not pretend to set out with any particular truths, but started from the broadest generalities, and deduced all specific truths by a strict course of reasoning upon these. And for the obvious reason that such generalities when assumed are more likely to be true than the particular propositions when only assumed. The fundamental error, therefore, had always been that of assuming any thing at all, and the world was a very long time in thoroughly freeing itself from this error. It was this that Bacon * sought to eradicate. He discovered that Nature possessed a vast storehouse of truths, every one of which was of great practical use to man, and he saw, moreover, what few had seen before him, that man was no more able to tell the contents of that storehouse, by gazing at its exterior, than he could tell those of a warehouse of goods by a similar process. He saw that it was necessary to seize the keys to the secret chambers of Nature's magazine, and to go in and examine the articles which she had thus been storing up and preserving during all time; to handle them, expose them to the light, separate those that were mixed, test their qualities, and ascertain their constitution and their value. Conjecture would no longer answer. Nothing could properly be assumed as truth that had not been proved—not by logical syllogisms founded on assumed truths as premises, but proved by careful and repeated examination by the senses, the only

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* For a statement of Bacon's claims to the title of "Founder of the Inductive Method," see vol. i, p. 140, note.

avenues of knowledge. Close observation, elaborate experiment, and repeated tactual and ocular tests, would alone suffice to establish a fact so as to justify its employment as a premise. It was very soon found that secondary truths thus obtained were of a nature calculated to sustain one another and lead to important practical results. From this point, then, we may most consistently date the scientific era. This new process, which Bacon advocated, was the precise reform needed to give an impetus to science. It was more in the nature of an art than of a science. It was to science what printing was to literature—a means of advancing it. Men have to learn how, before they can do any thing. They have to devise the means before they can accomplish any great object. And, when such means are proposed, the world is always ready to adopt them. I am disposed to exonerate the men of pre-scientific ages from the charges of idleness, negligence, and false dignity, which have been made against them, because they did not long before employ the laborious method of investigation and research now admitted to be so necessary, being convinced that they did not adopt this plan because it did not occur to them. They did not comprehend its importance or its necessity. They knew nothing of it. Some of the ancients did pursue it for some distance, but their successors did not appreciate the importance of continuing it. It required ages of failure in all other methods, and the consequences of that failure, at length to open the eyes even of the wisest.

I will not attempt to detail the results that followed the introduction of the scientific method. Less than three centuries have elapsed, and we see such an advance in science as could not have been dreamed of even by Bacon himself. It is true, other influences independent of this have conspired to accomplish this result. Of course, if it had not been for the invention of printing, comparatively little could have been done; and yet even this, unaccompanied by a sound principle to proceed upon, would have been likely to bring on another of those brilliant periods of useless speculation which characterized the literature of Greece and Rome, as well as that of the middle ages.

But, combined as these two influences were, they were eminently suited to the work which was then so greatly needed, viz., the reorganization of the civilizing forces of the world. No doubt, the world was ripe for this scientific reform, which would have soon come without Bacon, for contemporary with him in the last half of the sixteenth century we find a galaxy of great names, including those of Newton, Galileo, Leibnitz, and Descartes. The seventeenth century increased the number though not the eminence of the corps of scientific workers, and prepared the way for that of the eighteenth, during which the scientific method became fully established as the most potent agency of human progress.

It will thus be perceived that art, however viewed, is simply the application of science. What is called empiricism is the application of superficial truths, recognized in a loose, unsystematic way, to immediate and special needs; while science proper, considered with reference to art, consists in the application to the more general wants of mankind, both present and future, of the deeper and more general truths of the physical world which must have been unknown to the empiricist, and respecting which, if he possessed any ideas at all, he possessed erroneous ones, often conceiving them to be just the reverse of what they prove to be.

Very few fully realize to what extent modern civilized society depends upon practical, or inventive, art, or how thoroughly artificial civilization is. The erroneous idea which so extensively prevails of the essential inferiority of the artificial to the natural has already been analyzed and exposed (vol. i, p. 71; vol. ii, p. 86). This is the proper place to appreciate more fully the true scope of art in civilization.

The various objects which present themselves to the senses in the course of the experience of each individual may be separated into two general groups, according to whether they seem to have assumed their present form by natural or by artificial processes. When we look at a mountain, we at once refer it to the first of these classes, and when we look at a house, we as readily refer it to the second. This distinction we preserve after we have learned that there was a time when the mountain did not exist as well as a time when the house did not exist, *i. e.*, when we have learned to regard both as the result of changes which have taken place in the materials of which they are composed. And we should recognize the distinction no less plainly though we were to regard all natural forms as the products of design, as well as all artificial forms. The former, we say, are *growths;* the latter, *manufactures.* The former are either the results of self-existent activities in the matter composing them, or they are the products of design independent of the human mind. The latter are certainly the products of human design.

But, between these two obviously distinct conditions, there is a third, or intermediate, class of objects. A house, a machine, or a watch, appears to be wholly the product of human design and labor, while a blade of grass or a wild buffalo is as clearly a natural product. But in a head of bald wheat and in a thorough-bred Durham cow we see the combined results of natural laws and of human calculation. Yet, if we look more closely at those objects which seem to be wholly artificial, we shall find that none of them are absolutely so. A mill is only an assemblage of material objects, so adjusted that they may be set in motion by the application of some natural force—it may be, the power of horses, of water, or of steam. In any case, man has only adapted material forms to natural forces, so that, together, results will follow which are advantageous to him. All machinery embodies this principle, while a house or any such object has a similar negative effect, and passively illustrates the same truth.

Viewing the matter from this stand-point, therefore, we may correctly regard that form of human agency which has accomplished the great improvements (from the point of view of human advantage) that have been effected in so many vegetable and animal forms, as a simple extension to organic objects of the power which man has exercised over inorganic objects, in so adjusting the circumstances that the natural forces to which they are subject will bring about results through them advantageous to him. This eliminates the apparent third class and restores the original classification; changed, however, in this: that the so-called artificial objects are only partially so, that only the adjustments are artificial, while the results wrought by means of such adjustments are as much the immediate consequence of natural forces as is the action of a volcano.

If, now, we contemplate these two classes of objects from a somewhat more practical point of view, we observe that what we call civilization is due almost exclusively to the increased proportion of the artificial over the natural objects in contact with man. As a rule—not, however, without exceptions—this proportion is a measure of civilization

Civilization, then, may be defined as the artificial adjustment of natural objects in such a manner that the natural forces will thereby produce results advantageous to man. Although human design and agency are most apparent in the domain of inorganic matter and physical force, whereby so great progress has been made in the material conditions by which society is now influenced, still, it may well be doubted whether such agency has not done even more to advance society in operating upon the more subtile organic objects and vital and psychic forces. For it must be remembered that agriculture, horticulture, and the breeding and domestication of animals, whether for service or for food, all rest upon this form of art. Upon whatever class of objects man has put his artificial stamp, he has at once elevated and ennobled it and transformed it into a servant and benefactor of the race. In a certain sense he has treated himself and society in this objective manner, and exercised a limited control over the moral, intellectual, and social forces. But, as this control can only be successful in proportion as his knowledge of the materials and forces dealt with is complete, his success in this direction has thus far been slight, and his failures numerous.

Civilization is essentially artificial, and by whatever agency we may suppose other objects created or developed, we find that very few of them are adapted to man's purposes until he so adapts them by his own thought and labor. But, as we have seen (*supra*, p. 175), there are not wanting those who deny the power of material civilization to make men happier. They assert that, notwithstanding all these new and convenient arrangements, these gigantic and complicated appliances, these novel and ingenious mechanisms, this lightning communication and almost lightning conveyance; notwithstanding the entire round of busy, nervous existence which science is enabling us to lead and hurrying us through —notwithstanding all this, they claim that man was happier before he had these things, and would be happier if he could return to his former calm, unruffled, and unconventional state; that such things only fire his brain and wear out his system. They admit that it is a fine thing to visit a friend a thousand miles away and return in a week or a fortnight, to receive communications from absent ones even beyond the ocean in a moment of time, to make the tour of the world in a single month. All this they agree is very wonderful, very desirable; but still they say we should be just as well off without it, should live just as long, feel just as well, and enjoy life all the same in other respects, and be spared a thousand excitements and disappointments. In short, they consider contentment the object to be sought, and justly observe that it is best obtained by a quiet, unemotional mode of life (*supra*, p. 175, note).

The answer to all this consists in carrying the argument to its logical conclusion. Contentment is one thing; happiness quite another. The former results from the want of desire; the latter from its gratification. The one arises from the absence of pain; the other from the presence of pleasure. Contentment is, therefore, negative; happiness positive.

No one would go so far as to maintain that it is better to be without feeling than to experience agreeable feeling. No one denies that this civilization engenders great intensity of feeling. It must, therefore, be shown that more of it is disagreeable than agreeable; that there is more pain than pleasure, before it can be charged with detracting from the happiness of mankind. Such may have been the character of some of the false civilizations of the past when popular ignorance and superstition were combined with royal and sacerdotal supremacy, and worked the oppression and dejection of the many to gratify the pleasures and caprices of the few. But such is not the nature of the civilization which science inspires. On the contrary, it is wholly in the direction of relieving the burdens of men, of substituting mechanical for muscular force, of multiplying conveniences, cheapening and improving commodities, and thus of begetting and gratifying desires. It tends also to enlarge the views, elevate the thoughts, liberalize the sentiments, and extend universal charity and fraternal feeling.

Not only can we appeal to these general facts and considerations, but we can, to a considerable extent, support them by statistics. It has often been demonstrated that the actual casualties which result from the introduction of railway conveyance and travel are much less than those that formerly attended the use of stage-coaches for a given number of persons and a given distance. It is true, more people are injured and killed now than then, but it is because many times as many travel. The only point to be established is, whether in going a certain distance a person is most likely to incur danger by the one or the other conveyance. And the statistics show that in the railroad-car any one is far safer for the journey than in the stage-coach.[*]

It has recently been shown from reliable data, that there are ten chances of dying on the voyage across the Atlantic in a sailing-vessel to one in a steamship.[†] This refers to disease only, and does not include the risks of shipwreck, which, considering the greater length of voyage and the greater frailty of sailing-vessels, would probably at least double the danger. It has been proved also that the increase of knowledge respecting the laws of health, of physiology, and of ventilation, since the scientific epoch began, has both greatly diminished the amount of disease among men and increased the average length of human life.[‡]

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[*] Mr. Charles Francis Adams, Jr., in his work entitled "Notes on Railroad Accidents" (p. 241), says: "During the four years 1875–'78, it will be remembered a single passenger only was killed on the railroads of Massachusetts in consequence of an accident to which he, by his own carelessness, in no way contributed. The average number of persons annually injured, not fatally, during these years was about five; yet during the year 1878, excluding all cases of mere injury, of which no account was made, no less than fifty-three persons came to their deaths in Boston from falling down-stairs, and thirty-seven more from falling out of windows; seven were scalded to death in 1878 alone. In the year 1874, seventeen were killed by being run over by teams in the streets. During the five years, 1874–'78, there were more persons murdered in the city of Boston alone than lost their lives as passengers through the negligence of all the railroad corporations in the whole State of Massachusetts during the nine years 1871–'78; although in these nine years were included both the Revere and the Wollaston disasters, the former of which resulted in the death of twenty-nine and the latter of twenty-one persons."

[†] See "Monthly Report of the United States Bureau of Statistics," No 19, Original Series (July 10, 1868), p. 14.

[‡] See a paper by Dr. Edward Jarvis on the "Political Economy of Health," published in the "Fifth Annual Report of the Massachusetts Board of Health." Statistics collected by Mr. Baldwin Latham "show that, of seven leading towns and districts in England, such as Croydon, Ely, Salisbury, and others, where careful and thorough modes of sewerage prevail, the percentage of death-rates has been reduced from forty to twenty per cent." (From a paper by Dr. Andrew D. White, President of Cornell University, read before the "American Public Health Association" in 1873.) At the "Educational Conference," held in London in 1877, Mr. Thomas Bond, Assistant Surgeon to Westminster Hospital, asserted that on an average one half of the number of out-patients treated

In seeking to comprehend the real extent of the ameliorative effect of artificial civilization, *i. e.*, of the civilization due to the arts, the problem is obscured by what may be denominated *latent amelioration*. This may be more specifically defined as progress which does not become perceptible in consequence of movements which it has alone rendered possible. The effect of this law is to increase the *quantity* of progress at the expense of its *degree*. Even this definition, however, requires illustration. This quantitative progress has taken place in two directions: first, toward increasing the number of individuals; and, second, toward increasing the local area occupied.

The fact that increased sagacity, which involves the fundamental quality of mind that underlies all art, was the sole cause of man's ability to break over the barriers of the environment which restrict all other animals to a circumscribed habitat, and prevent their multiplication beyond a certain degree of density fixed for each species, has been insisted upon, on numerous occasions (vol. i, Chapters VI and VII), as one of the fundamental truths of anthropology and sociology. This truth also illustrates with great clearness the principle above formulated. Notwithstanding the increased means devised by human sagacity for obtaining food, the human species found itself no better off than the remaining animals. The means of subsistence artificially created were applied to the increase of population hitherto impossible, and want still stared many individuals in the face as before. But in the animal state the mortality was far greater, since, while the reproductive forces were unchecked, and the same number were born as now, the friction of the environment was sufficient perfectly to equilibrate the deaths and births. In the new dynamic condition due to the exercise of a greater brain-power, there is a co-efficient of increase. If the in-

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by a hospital surgeon suffer from diseases due primarily to a want of knowledge of the laws of health and cleanliness, chiefly in regard to dress, ablution, and ventilation ("Popular Science Monthly," vol. xii, p. 380).

creased means of subsistence could have been wholly applied to a number of survivors, sufficient only to keep the population stationary, the effect must have been to render these comparatively comfortable. But this real progressive effect, in consequence of the increase of population which it alone renders possible, is wholly lost to view, and may appropriately be called latent.

Again, a large amount of potential progress is locked up in migration. Unsatisfied to remain in one spot and enjoy the surplus which intelligent labor and skill compel nature to yield, men have ever been abandoning their mother-settlements, and pushing out into new and untried fields. This has not been accomplished without cost, and this cost has to be deducted from the sum total of enjoyment which the same effort would have yielded if wholly applied to that object.

These two powerful neutralizing influences have accompanied human society from its origin to the present day, and are as forcibly felt in the most advanced communities as they were in the primordial nucleus of society. The highly effective artificial appliances of science and inventive art are only made the means of more rapidly and thoroughly peopling the earth. The great advances made by literary and educational agencies are overslaughed by fresh additions to the illiterate classes of the population. The real progress of the world, which is immense, is being perpetually diluted by quantitative increments, leaving the apparent condition of society unchanged. As the world is now constituted, it requires constant renewals of the progressive impulses to maintain the stationary condition. Let science for a moment withdraw its daily re-enforcements, let popular education be relaxed for a single year, and the complicated machinery of civilization must come to a stop and social degeneracy set in.*

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* The "hard times" occasioned by the financial crisis of 1873 produced a reaction in the States of Maine and Texas, which resulted in the repeal of an important part of the salutary educational legislation of those States, and the

The prevalent overweening faith in the necessary stability of the social system is unfounded. Renewed efforts at every moment, and the constant creation of new propelling agencies, are all that sustain it.

It is from this point of view, however, that the real influence of the four great progressive agencies—language, literature, art, and science—can best be appreciated, and the fallacy of the superiority of the natural to the artificial can most easily be exposed. The withdrawal of these influences, even now, would be followed by the rapid dwindling of the human race to a few sparse denizens of the earth, and their contraction within certain restricted territorial boundaries such as limit the various faunas of the globe.

NON-PROGRESSIVE AGENCIES.

The influences which have thus far been considered have been the chief progressive ones from the historical point of view. They have not only contributed to social progress in the limited and only proper sense in which that term is here used, but they have constituted the active and positive dynamic forces as distinguished from certain passive and negative influences about to be considered, which, historically viewed, have rather furnished the conditions to progress than any direct impulse inherent in themselves.

This distinction is a very important one, not only as serving to correct wide popular misconceptions, but as affording some apology for such misconceptions, and supplying a ground for reconciliation of apparently opposing views.

The most comprehensive conception under which all the influences of the negative, or protective, class can be embraced would be that of society itself. But, as we have seen in a previous chapter, society can scarcely be regarded as a

number of persons annually reaching the age of qualified voters during the four or five succeeding years from the uninstructed classes rendered it very difficult for the party of progress to regain control of legislation after the return of prosperity.

product of the indirect method. It is rather the result of the two facts that there was at the time of its creation an increase of sagacity due to brain development, and that, as a necessary consequence, there followed an increase of individuals, who, notwithstanding powerful anti-social tendencies, were thus compelled to associate.* But this compulsory association which represents the initial social stage (vol. i, p. 465) was necessarily accompanied, even from its inception, by a train of influences of various kinds, and among them those which have already been passed in review as inherently progressive agencies. In addition to these there were also developed at that period the other two important human institutions already referred to earlier in the present chapter, viz., Government and Religion, the first of which comes clearly within the class of passive, negative, or protective influences, and which, in its widest scope, comprehends so nearly all of these, that the treatment of that class will, for our present purpose, be sufficiently complete if we adequately discuss the origin and nature of government.

As regards Religion, the somewhat anomalous position which it occupies with reference to human progress will require for it a special treatment.

GOVERNMENT.

The distinction which we have drawn between society and government will, upon closer inspection, be perceived to be the fundamental one so often recurring between the natural and the artificial. Society is the result of blind circumstances not at all due to design, or *intention*; it is spontaneous. Government, as we shall see, is a product of genius, and required the application of the indirect, or inventive, process. The time devoted to this preliminary explanation will be much more than regained in the avoidance of all those subtilties about the origin of society and its relation to government, which are so often, I had almost said universally, brought into all treatises on government and discussions of its principles.

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* Spencer, "Principles of Biology," vol. ii, p. 506 (§ 376).

In considering this subject of human government, it will not do to lose sight of the primary object in view, viz., that of ascertaining in how far it has proved a benefit to mankind. Let us, therefore, get a clear idea, at the outset, of what it consists in. For the present, it will be actual, and not theoretical, government which must be considered. We are not now inquiring what it should be, nor what is necessary to constitute a theoretically perfect government, but are only asking historically what have been the governments of the world, and what they still are. For only such an inquiry could subserve our present purpose. The very name of the institution is something of an index to its character. It is a system for *governing*, *i. e.*, for enforcing obedience to positive laws: implying, of course, a disinclination on the part of the governed to comply with those laws. Its necessary effect, therefore, is to prevent certain individuals from reducing certain of their thoughts to action, from carrying out some of their natural impulses, or, in short, from gratifying such of their desires as are opposed to the preservation of social order. But the gratification of desire is what alone constitutes pleasure, the uninterrupted experience of which is all that constitutes happiness. Therefore, the whole effect of government, as exerted in this direction, is in this sense opposed to human happiness, and consequently, were there no benefit to offset it, would be opposed to social progress. These remarks, however, can be only understood in the sense intended when we compare the social state, under these restraints of government, with a state of primeval nature. Saying nothing of the increased capacities for enjoyment in civilized nations, it is evident that man in a supposed unrestrained state, in which none of his own race have the power to deprive him of any pleasure which he may seek and be able to secure, would be far happier than in a condition where half of his desires which might otherwise be gratified are forbidden that gratification by the laws of government. Nothing can render any one more abjectly miserable than to be denied by others, who happen to possess the power, the gratification of a desire otherwise within his reach; and, when this extends to a whole people, it becomes not only a most grievous burden, but, if long continued, destroys the desires themselves, and with them the entire vitality and progressive character of the nations under its yoke. It is this truth which M. Guizot* perceived when he attributed the mania of the people of the mediæval ages for assuming the monastic life to the long series of governmental restraints under which all the people of that epoch had been held.

But is it not necessary that men should thus be governed? are not the pleasures of which they are deprived such only as conflict with the happiness of others or even of themselves? and, is not the evil done by government much more than overbalanced by the good which it secures to society at large? These questions will be in a manner disposed of at a subsequent stage of this inquiry.

It is not, however, wholly candid to confine the functions of government, even as it is and has been, to the single object of governing, or restraining. Practically as well as abstractly, government has other objects, among which are the *protection* and the *accommodation* of the people. And it is usually in the name of the first of these objects that its governing, or restraining, power is exercised. For, when closely scrutinized, the mere government of men for its own sake is not a legitimate object at all, and very few, if any, authorities have ever dared to avow it as such. Theoretically, therefore, and ostensibly, there have never been but three objects of government, of which governing itself was not one. These three objects are the *protection* and *accommodation*, before mentioned, and the *amelioration*, or improvement, of society.

The protection of society which government offers is based on the notion, and doubtless the true one, that, if men were without government, they would injure one another more than any government would injure them. Since the origin of society, which was only a consequence of the *populous state*, it has always been necessary to have some protection for individuals against themselves. On the one hand, full of strong and irresistible desires, all aiming at the one universal object, their own satisfaction, each individual seeking his own pleasure, and, on the other, ignorant and heedless of the consequences of their acts, the members of the primordial society were perpetually swallowing up the happiness and welfare of one another. The nice and delicate relations that must necessarily exist between so many persons in such close local proximity to one another require the greatest care and circumspection on the part of the most enlightened, the most thoughtful, and the most guarded of men, to prevent jarring conflicts and real injustice. What, then, must have been the condition of those peoples in the infancy of society, when these relations existed very much as now, because the cause of them—viz., density of population—existed, and yet the rational faculty was completely subordinated, the passions fierce and uncurbed, and regard for others wholly absent? It is clear that all rights must have been disregarded, and crime and abuse must have prevailed every-where where government did not interfere. But government was never wanting. The most backward races usually possess some system of authority to prevent these fatal consequences.* We will presently inquire into the causes of its origination. At present it need only be said that it has always been in the name of protection, of delivery from these conflicts, and of security to the persons and property of individuals, that government has appealed for support. And this protection is still needed even in the most enlightened countries. Men have not yet grown so intelligent, so curbed their passions, or so guarded their conduct any-where in the world, as not to require a protectorate to be established over them for the preservation of peace.

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* "Histoire de la civilisation en France," vol. i, p. 409.

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* Mr. Spencer names, as races entirely without headship, the Fuegians, some Australians, the Wood-Veddahs, Bushmen, Chepangs, Kusundas of Nepaul, most Esquimaux, and the Arafuras and Land Dyaks of the upper Sarawak River ("Principles of Sociology," vol. i, p. 571).

This phase of the subject will be more specially considered further on, and we may, therefore, now pass to the second ostensible object of government alluded to, viz., the *accommodation* of society. The theory of this stage is, that society forms itself into a sort of corporation and employs agents to transact its business. A large number of people having many interests common to them all must greatly facilitate the work of securing those interests by placing the management of their affairs in the hands of trustworthy agents. The same principle and no other applies here as applies to private companies and corporations aggregate, for any purpose whatever. This is the most simple and legitimate sphere of government, though one very little thought of, and usually ignored in discussions of the sphere of government.

As regards the third object, viz., the improvement of society, though difficult in many cases to separate from the second, still, in so far as clearly appears, it has hitherto nearly or quite entirely failed of its object. Whatever may be the future of government as an active progressive agent, it certainly has not proved such in the past. Mere protection, however essential to progress, is in itself a negative influence. Government may have sometimes proved a patron of the arts, and at times actively fostered and encouraged the several progressive influences heretofore considered, and thus performed great service for civilization, for which due credit should be given, but this no more constitutes it a progressive agency than the endowment of scientific research makes the donor a scientific investigator. The accommodative function of government approaches much more closely to the ameliorative than does the protective function. It is difficult to draw the line between accommodation and improvement in many of the present operations of the most advanced governments (vol. i, p. 61). This subject will be discussed in the sequel, when government will be surveyed from a theoretical point of view, and with reference to its possible future. At present the historical stand-point only claims our attention, and from this stand-point, at least if we except some of the latest developments of government, the truly ameliorative stage has not yet been reached.

ORIGIN OF GOVERNMENT.

In pursuance of the historical method, and with less regard to the merely logical classification of its functions, let us inquire, next, somewhat more particularly into the origin, or genesis, of government.

It must be confessed that upon this problem there is nothing to bear which is entitled to the name of direct proof. The actual antecedents both of government and of society are lost in ages of unwritten human history, and owing to the nature of the institution there are no relics left pointing to a solution. In place of these, however, we have existing savage races of men whose social states represent nearly all the stages through which human government has passed, and the inference is certainly a safe one that the ancestors of the present advanced races did not greatly differ in such general respects from existing low races. The proof that such is the case has in recent times become so strong that the law of evolution in human society is now accepted as the basis of modern anthropology, while this in turn rests firmly upon biology, which prolongs the series and connects in one system all the forms of animal life.*

The origin of government may be considered from two quite different points of view, which may be distinguished as the historical and the philosophical. From the historical point of view it is the exact facts that have actually taken place in the course of the process of the development of the institution which are sought. From the philosophical point of view it is the reasons underlying each step and the general *rationale* of the whole process which are especially studied. Of course, the philosophical study would be easy if the historical facts were obtainable, as these would furnish all the needful data; but from the nature of the case such pre-historic data are, for the most part, unattainable. Government has doubtless originated a number of times among mankind, but always far back, near the origin of society itself. A few existing tribes are supposed to be wholly without government, but these are also shown scarcely to possess a society. The origin of government, like that of any other spontaneous natural product, as language or art, must have been a process too gradual to admit of direct observation. Owing to this dearth of facts, the ablest writers have speculated upon this question. Mr. Bagehot says that "it is almost beyond imagination how man, as we know man, could by any sort of process have gained this step in civilization."* Comte thought that the first governments must have been essentially military.† He says: "Les qualités purement militaires, d'abord la force et le courage, plus tard la prudence et la *ruse*, y deviennent habituellement, dans les expéditions de chasses ou de guerre, la base immédiate d'une autorité active, au moins temporaire."‡ Generalizing from extensive facts, Mr. Spencer arrives at some important conclusions: "The headless clusters, wholly ungoverned, are incoherent, and separate before they acquire considerable sizes; but along with maintenance of an aggregate approaching to or exceeding a hundred, we ordinarily find a simple or compound ruling agency—*one or more men* claiming and exercising authority that is natural, supernatural, or both. This is the first social differentiation." * In another place he speaks of "the rational theory, inductively based, that a state of political subordination gradually became established through experience of the increased satisfactions derived under it." †

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* Comte, "Philosophie Positive," vol. vi, p. 488.

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* "Physics and Politics," pp. 136, 137.

† "Philosophie Positive," vol. iv, p. 507.

‡ *Loc. cit.*, vol. v, p. 122.

The only opinions which have ever been expressed upon the question of the origin of government have been such as the above, from the philosophical point of view, either based upon common experience and human political history, or upon an acquaintance, more or less imperfect, with the condition of existing savages. It is from these same points of view that we must also here approach this difficult problem.

Having arrived at a rational conception of what kind of a being man was before any society existed—that is, before the essential condition of society, populousness, existed—we are better able to understand how society and government should have come about. The former, as before remarked, was the necessary result of the accumulation of individuals. It was not for the protection of individuals, as it is so frequently stated, that society was originally formed. This protection is the true province of government. Here at the very threshold of the subject we find a most vital error to have crept into all the discussions, and bred confusion in popular ideas of government and society.

Society has nothing to do with protection. It is simply the gregarious condition of the human race, endued with their natural passions and affections. And it is not from these alone that government has sprung. It is the product of these circumstances, combined with a third, which is the immediate result of these, viz., the evil which necessarily resulted from the existence of such a being in such relations. Here it is that man, even regarded as an animal, must have differed materially from other gregarious animals. A herd of sheep might easily live in the utmost security from difficulties among themselves. Their only danger is from with-

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* "Principles of Sociology," vol. i, p. 490.

† "Data of Ethics," p. 53.

out. This, of course, is easily explained. Not only have they no natural means of attacking one another, but, even if they had, as many gregarious animals have, they would have no inducement to do so. Even though they had strong passions, they are not such as could ever be directed against those of their own species. It may be worth repeating (vol. i, pp. 453, 462) in this connection that those animals which live wholly on flesh and are armed with strong offensive weapons, as the lion and others of the cat kind, eagles, falcons, and hawks, are not gregarious. The reason for this is, that such a mode of life would result in their own extinction. For when hungry or enraged they would attack one another, though their natural affections prevent them from attacking their mates or their own young. Now, although man does not rank altogether as a carnivore, and although he does not by nature possess any very formidable weapons of attack, yet he possesses just such a nature as is best calculated to render a gregarious existence impossible unless counteracted by some opposing influence. His wants are varied proportionably to his faculties, making great allowance for the perfection which these have acquired by civilization. His passions are strong, and heightened by imagination, the natural result of a superior intellect. His affections, as toward those to whom he is attached, are proportioned to his passions. And lastly, though not naturally an aggressive being as toward other animals, he still possesses the form, stature, and suppleness of limb to enable him to battle ferociously with those of his own species, even without artificial weapons. Such being his nature, if we now suppose him without reason, distinguishing here carefully between reason and mere ability to reason, suppose that he do not reason nor reflect upon his conduct, or, what is the same thing, suppose that his impulsive always overbalance his rational desires, and influence all his acts, we can readily see how incompatible must have been his nature with the existence of a peaceable state of society. For if one desired an object which was in the possession of another, nothing but physical inability could prevent him from obtaining it, at whatever expense to the other; and thus the whole notion of property is subverted. The strong and indolent would compel the weak to serve them, and the worst forms of slavery would exist. The gratification of the sexual passion would not only, as it has done in spite of government, work the subjection of the female sex, but it would engender bitter and interminable conflicts between rivals of the male sex. And this would only be a beginning of the quarrels, battles, and abuses that must, from the nature of things, attend society at its origin, in the absence of any system of protection. The only question left is whether such was the real condition of human nature at the time of the formation of society. There seems no doubt that it was little or no better than here portrayed. In fact, many savage races are very little above this standard now, and we also see multiplied instances in civilized countries to confirm this view. If, therefore, this is a fair statement of the condition of the human race at some epoch of its career, and if such is its natural character unrefined by development or civilization, we are compelled to reject the doctrine of Aristotle, so prevalent every-where, that man is naturally a gregarious animal, or, as it is less objectionably stated, that man is *naturally* a social being.* Civilized man is undoubtedly a social being, but this quality has been the result of a long and severe experience by which a great change has been produced in his constitution. Not only so, but he is utterly incapable of social existence in a native state, unless protected in his life, his liberty, and his property by an artificial system of government.†

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* This view is also strongly defended by Comte ("Philosophie Positive," vol. iv, p. 386). Darwin also inclined to adopt it ("Descent of Man," vol. i, pp. 81–82); while Bain regards sociability as a "distinct fact" which can not be resolved into simpler elements ("Education as a Science," p. 68). See also Spencer, "Principles of Psychology," vol. ii, p. 570.

† The various anti-social tendencies in man have been recognized by several authors. (See Lyell's "Principles of Geology," vol. ii, p. 471; also, Herbert

At first sight, admitting all the conditions described, it would seem probable that society, through its members, those who had experienced the hardships and abuses which we suppose to attend society while unprotected, must have assembled and established a protectorate, placing power in the hands of some few to avert the calamities complained of, preserve peace, and secure justice. This would be the first explanation that would occur to the mind, and it is, substantially, the prevailing opinion. It is from some such idea of the origin of government that has been derived the theory of a "social compact" * and the implied "contract" into which writers are so fond of saying that each member of society has entered; voluntarily consenting to give up a certain number of his rights to the state and pay into its treasury a certain sum for the benefit of others, and for his own protection. But it is worthy of serious inquiry whether the very foundation of this doctrine be not false, and the doctrine itself unsound. To form a rational idea of how a government might have been constituted under the circumstances we have been supposing, it is necessary to consider many things. That would probably be a very unsafe conclusion which should be based on a calculation of what would be likely to result were an advanced society to be, for any cause, deprived of government. Yet, if such a case were supposed merely for the purpose of assisting us in solving the real problem, would the theory in question be likely to be sustained? If any enlightened state, as, say, England, France, or the United States, should be suddenly bereft of all government, and for the time lapse into a state of strict anarchy, is it to be supposed that the formation of a government under those circumstances would be due to the action

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Spencer's "First Principles," p. 511, and "Principles of Psychology," vol. ii, p. 571.)

* Blackstone's "Commentaries," Book I, pp. 125 (note 5), 126, 233; Book III, pp. 160, 161; Book IV, pp. 8, 382. Comte, "Philosophie Positive," vol. iv, p. 50.

of the people induced by the inconveniences which they were suffering in consequence of the absence of government? It certainly would not. If nothing were done for a great length of time, this action might, it is true, eventually be taken; but who supposes for a moment that such would be the practical state of the case? On the contrary, how quickly a government would be formed by a few individuals having influence in the state, and whose interests were but slightly compromised by the want of government, who would be the last to suffer from a state of anarchy, but whose chief motive in seeking its establishment would be the love of power!

The people never seek a government; government always originates itself. The history of nations is not without illustrations of this precise point, and never did it yet occur that a people took the initiatory steps for the formation of a government with a view to protecting themselves from the evils which had come upon them from the want of a government. On the contrary, the duty of affording such protection has always been quickly and gratuitously assumed, often shamefully usurped, by individuals claiming to be public benefactors and patriots, but whose chief motive was love of fame and power. These historical facts are of the utmost value, since they furnish the key to the real question here under consideration: what was the manner in which government was originally instituted? Human nature being in the main the same then as now, it is probable that similar results would follow from similar circumstances. Yet the circumstances were not wholly the same. That general intelligence among the people which it is presumed would now induce them to counsel together and establish a government for their own protection if no one should take it upon him to do it for them, was entirely wanting at the origin of society, so that it is possible that, if it had been left for them to make a government to defend themselves from the evils of anarchy, they would never have had any at all. Each individual would have defended himself and his to the best of his ability, the weak would have succumbed to the strong, war and strife would have destroyed great numbers, and thus the race would have kept itself thinned out and segregated so as to prevent the existence of society, and of course of government. Some savage tribes furnish a near approximation to this state of things, and its actual realization may be thus readily conceived. Indeed, there is no determining how long this state of anarchy and sparsity may have in fact existed before the *invention* of a government. Certain it is that the existence of government must have been coeval with that of society in the proper sense, since those causes which would prevent the establishment of the one would also prevent the possibility of the other.* Government must, therefore, be regarded as an invention of the human mind, the result of an extraordinary exercise of the rational, or thinking, faculty. As such, it could not have been the simultaneous conception of a whole community or of any large number of people. It must have been the emanation of a single brain or of a few concerting minds, the special exercise of a particular kind of cunning, or sagacity, whereby certain individuals, intent on securing the gratification of the special passion known as the love of power, devised a plan, or scheme, of government. The passion of ambition has for its object fame or power, and the plan must have consisted in speciously claiming as the real object the protection of the injured and the punishment of the injuring. This, as the sagacity of the founders of government foresaw, would secure them adherents and confirm their authority.

This theory of the origin of government is highly foreshortened, and would be extremely crude and inadequate unless it were recognized that government has been at the same time the result of development and social growth like all the other social agencies.

Government has been at once a protector of all the true civilizing agencies and a barrier to their normal development. In restricting liberty it has reduced the amount of possible enjoyment, and justly earned the title so freely applied to it of a "necessary evil." It has always sounded its own praises, and all the world, even to its worst victims, have joined in the chorus; and yet it has really proved a scourge which all men from the earliest ages have been striving to escape. The greater part of the wars of which history gives us any account have been attempts to resist the encroachments of government, and a large proportion of the troubles society has had have been caused by efforts on the part of the people to get rid of the only government they possessed. The history of the revolutions, the civil wars, the intestine strifes, the assassinations, and massacres which fill the annals of the world, is only the repetition of the one desperate and unwearying effort to throw off the odious yoke of self-imposed and tyrannical government. Never was there yet a case where a people clamored for a government, yet the cases are innumerable in which they have clamored for its removal. Governments always institute themselves, they never wait to be instituted. They always emanate from the few seeking power, never from the many seeking protection. It has always been a struggle between the few governing to govern more, and the many governed to be governed less. Government has been, as it were, a yoke upon the necks of the people, who have perpetually sought to throw it off or drag themselves from under it. What we call progress in government, the securing of human liberties, the establishment of human rights—all these are only so many different expressions for the fact that the different peoples have succeeded, in a greater or less degree, in getting rid of the burden of government. For they could not secure their liberties had they not been previously taken from them; there would be no need to establish their rights if they had not been once withheld or jeopardized. And these are the acts that government is perpetually committing. Self-constituted as it always is, and framed in the interests of those who govern, it is but natural that such should be the case. It would be indeed strange if it were always to their interest to promote the happiness of the governed. It is impossible that it should not very often be desirable to do acts which must greatly oppress them. Nor need we severely censure such acts, since it is for the governed to prevent them. It is only human nature acting itself out. It is not the injustice of acts done by government that prevents their performance. It is always the fact that some effectual barrier, either of force or of interest, has been interposed. Scarcely any of the progress that has been made in government is attributable to the increased sense of justice in the governing class. Almost if not quite all of it is due to the resistance which has come from the people. This resistance has always been in proportion to the intelligence of the governed classes, and its tendency is constantly in the direction of popular representation. The effect of this is to shift the resistance from that of force to that of interest, the resistance of force being always dangerous and uncertain, while that of interest is safe and regular. The least enlightened nations are always subject to different forms of autocracy or despotism which are every now and then, according as they are more or less oppressive, overthrown amid violent revolutions and bloodshed. The most enlightened, on the other hand, have representative governments which make it a matter of pure self-interest for the legislators to be just. It is the great truth which these peoples have at last learned, that no dependence can be placed upon the *sentiments* of rulers, but all things must be based upon the observed workings of the laws of human nature, one of the most absolute of which is that no one will sacrifice a greater for a lesser gain, where sentiment only constitutes the motive.

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* Blackstone's "Commentaries," Introduction, p. 48.

We see, then, what government practically is: fundamentally a necessity, and yet exercising a powerful influence in direct hostility to human progress. It is that by which alone society can exist, and yet it is so ill-adapted to its end that it antagonizes instead of promoting its improvement. Incapable from its nature of making society any better, it loses no opportunity to make it worse.

IDEAL GOVERNMENT.

Let us now see if we can find a *rationale* for all these paradoxes. When we have admitted the necessity of government, we have, of course, established its utility. The evils which it engenders are all extraneous, they do not belong to government proper; yet, as they are wholly due to it, they are styled the evils of government, and properly. But, were government restricted to its legitimate sphere, no evils would arise. Hence, what we call the evils of government are, after all, only the evils of false government, or misgovernment. They are the blemishes of the system, the evils of governments as they are and have been, not of government as it should be. We must conclude, therefore, that existing governments are defective, and, if so, we should inquire what would be a perfect government. The answer has already been hinted at.

A true government should be in most respects the precise opposite of existing ones. In the first place, it should originate in a manner directly the reverse of that in which all have originated. All governments thus far have been devised, and established by, and in the interest of, those desiring to govern. A true government would be demanded, created, and put in force by, and for the benefit of, those desiring to be governed. In the second place, as regards the light in which the governing class and the class governed regard government, the present state of things should be exactly reversed. Whereas, now, the people look up to the government as a master, and beg of it to vouchsafe them liberty and rights as a matter of favor, and the government looks down upon the people as its "subjects," and denies their petitions, or, granting them reluctantly, lays them thereby under a perpetual debt of gratitude; in a true government the people would regard the officers of government as their remunerated public servants, and require of them that they faithfully perform the service for which they were employed and in the manner in which they were directed; and they in turn would not fail to comply, on pain of removal. Again, the strange and incomprehensible distance which now separates the government from the people would be entirely removed by a true system of government. As governments are now constituted, there is no other relation recognized than that of authority on the one hand and subjection on the other. The people, at least the great majority of them, submit to the burdens of service and taxation which government imposes, not as a duty, not as a *quid pro quo*, but simply as a necessity. They are not consulted, not even requested—they are simply coerced. They comply, without the least idea of ever receiving a return. They consider it in precisely the same light as if required by force to give of their substance and earnings to a stranger who possessed the power to exact it. And government encourages this sentiment, and treats them in all respects as though this were the only relation subsisting between them. In a true system of government all this would be reversed. The people, having created their government for their own convenience, would understand what was the real relation in which they stood to it, and the government would understand this relation also. It would be an intimate relation of immediate interest, not that of a foreign power. Society would be the source of authority, and the government its agent; but this relation, being a true one, could never be attended with those interminable quarrels for the mastery which now characterize the opposite and false relation. If the people paid money, it would be into their own treasury, kept by their own chosen agents, who would not dare or desire to appropriate it otherwise than as instructed. If a war must be waged (and under such a government this would be a very rare event), it would be the people's own war, and not the war of ambitious rulers; and it would be cheerfully fought. And thus it would be throughout, the present system being supplanted by one entirely different, and in most respects the very antithesis of it, founded on the principle that the people desire to be governed, which is diametrically opposed to that upon which all existing governments are based, viz., the fact that certain persons desire to govern.

The theory of government is very simple. Where many individuals are situated in narrow, local compass, those acts which tend to satisfy the desires of one must in many cases produce pain to others. The individual thus injured resents the injury, and conflict is the result. Where each individual acts in his own case, it reduces itself to a question of mere force, and this is an effectual bar to the existence of society. But man reasons, and perceives that justice is not always with the strong. Hence there arises a demand for a tribunal for the decision of cases according to reason. Every demand brings after it a supply. In this case the supply came too soon, and from the wrong quarter. If ambition could have been kept down, society would, perhaps, have ultimately erected a government, and the government which society established would have been the true theoretical one described above.

But this is the primary quality of government which is necessary for the existence of society, viz., protection. If this were no longer required, if mankind were grown so wise as to be able to live in peace *in* society, as was once possible *without* society, still there would be need, not of government, but of *organization*. Society would need agents to transact its common business, and this is what I have called the secondary function of government, or accommodation. This, too, is all that will one day be left of government. It is toward this that all nations have been steadily drifting. The other feature of government must necessarily be odious, however indispensable, and the sense of this odiousness, aggravated by the perpetual usurpations of the ruling class, is what accounts for the incessant warfare which society has always been waging against government.

But, whatever be the objects of government, it is clear that it can have no other just origin than the *will* (not the "consent," which is merely negative and permissive, but the positive, declared will) of society. A class of individuals possessing wealth, intelligence, or lineage, can not be called society. It is not even an aristocracy, it is an oligarchy. It only increases the number of rulers, and thereby increases the burdens of the people. Neither can it be called society when, where distinct races occupy the same territory, one race excludes all others, or when any race or class is excluded. It is not the will of *society* which governs when the individuals of one sex are prevented from the expression of their will. This is only a rule of sex, and, although logically the most radical defect, this *andrarchy* is the form of government which the world has always had to endure, even in those nations which have called themselves democracies, where not only one half of society is excluded, but an entire class with all its peculiarities. It would be far better were every second individual excluded without regard to sex, since then there would be equilibrium.

There seems to be but one other question of importance to be discussed in this hasty review of the principles of government, and that is, What are the prospects that the human race is ever to be rid of this onerous function of government?

This question, of course, admits of no definite solution. It must remain a mere matter of speculation. It is, indeed, maintained that man, being imperfect, must always have government if he is to have society. Perhaps this is the prevailing opinion of those who have thought on the subject. And, taking government in its most comprehensive sense, as loosely understood in common language, this view is undoubtedly correct. But I have shown that the notion of government is compound, and capable of being separated into several components. These component elements are, as has been said—1, the restraint; 2, the protection; and, 3, the accommodation of the people. To these must be added a fourth, the direct improvement or amelioration of society. This, however, is a branch of government which belongs to the art when it shall have reached its scientific stage, and will receive special attention further on.

The first two of these functions of government, the restraining and the protecting qualities, are analogous in their nature. Indeed, they only differ in the degree to which the authority of government is carried. The term "protection" implies encroachment on the part of some upon the rights of others, and consists in the successful restraint of that encroachment, so that some must be restrained in order that others may be protected. Were it universally true that the party restrained was in the wrong, and the party protected was protected only in that to which he had a right, such a government would be a true protectorate. But even on such a supposition government would be odious. It would not be odious to those protected; neither is a despotism odious to those whom it favors; but it would be odious to those whom it restrained, for it would thwart their schemes and obstruct the gratification of their desires, and in so far deprive them of liberty and happiness. If the people were so low as to make it necessary to restrain half their acts, such a government, though it did all things in exact accordance with absolute justice, would nevertheless be despised by a majority of those over whom it exercised a control. Thus, even on this hypothesis, we can readily see how a people might struggle to throw off a really just government. It is not right and justice that men have always been seeking and struggling to attain, it is *liberty;* freedom to do as their desires prompt them, and to be their own judges of the rightfulness and justness of their actions. Whether an act be right or wrong has no necessary connection with the desire to perform it, and in either case the obstruction to that performance will be equally resented and equally resisted. The perfection of a protectorate, therefore, must depend upon both the rulers and the people, and will be measured by the degree of correspondence which exists between their desires and absolute justice—which is in turn measured by the degree of intelligence.

NATURE OF LIBERTY.

This question of the true nature of liberty is of the highest importance, and demands a somewhat closer examination.

By liberty is not, of course, meant liberty of volition (vol. i, pp. 395, 397), but liberty of action. The alleged liberty of man to will whatever he may will to will, is one of nature's great delusions, and only worthy of serious refutation because the practical effect of a belief in it is to deprive men of their real liberty, and to subject the masses to the domination of the few.

The liberty to *act*, however, is quite another thing. To secure it in its highest degree has ever been the dream of the noblest minds and the effort of the greatest peoples. Without knowing why, all men at all times have regarded it as the greatest of all earthly blessings to be free, and there is no effort too herculean to be put forth, no danger too imminent to be incurred, and no sacrifice too heroic to be made, in order to preserve it. In fact, liberty has in many cases been preferred to life. Such a stupendous motive can not surely exist without a great principle to rest upon, though few dig deep enough to find it.

What, then, is this principle? What is it that makes liberty so sweet? It is usually regarded as a sufficient justification of almost any act that it is done for the sake of liberty. It is tacitly understood by all mankind that liberty is a sufficient motive and operating cause for the performance of any action. It is as if it were one of those original causes of which we sometimes hear, which have no prior motive behind them, but operate as ultimate laws within themselves. Yet such is not the case. Like all other human motives the love of liberty is capable of analysis, and traceable to other underlying principles. Go back with me to the primary principle from which we set out at the commencement of the last chapter, viz., that man in common with all other living creatures intuitively shuns pain and seeks pleasure. This is because the former causes misery, while the latter results in happiness. For the inclination to seek pleasure is desire, and its gratification alone consists in securing the pleasure sought, which constitutes happiness. But the gratification of desire involves—is itself—an act; it consists in acting as the desire prompts. Thus, all happiness is derived from acting as one desires to act. To be happy, therefore, men must have the power to act as they desire. This power is liberty. It lies at the very vitals of existence. Without it enjoyment is impossible, and without enjoyment life is intolerable. Remove liberty and you remove the very object of existence. Within this sacred idea is bound up all that man holds dear on earth, his own individual happiness. No wonder, then, that he is so jealous of every infringement of his liberty; no wonder that he is even ready to lay down his life rather than allow it to be taken away. But it is the main object of government, as we have seen, whether in its capacity of a restraining or a protecting power, to deprive of liberty; for the liberty to do wrong is as sacred as the liberty to do right, and as highly prized and strenuously defended. Liberty does not consist in the power to do right, or the privilege to act subject to certain limitations and within certain restrictions. This may be the definition of moral action, or lawful conduct, but it is not the definition of liberty. Liberty is the power to act in obedience to desire. And, as man never can be perfectly happy until he is perfectly free, he can never be so until he can abolish the restrictive and protective attributes of government. Government in its most fundamental notion is the necessary foe of liberty; it is, therefore, in so far a barrier to human happiness. In the degree of liberty enjoyed the race seems now to be in the middle of a great cycle. It began its career and perhaps pursued it for ages in a condition of complete liberty *—the liberty of the wild beast. The freedom of the lion or the eagle belonged to man amid the forests of his tropical home. His desires were limited, but, such as they were, they were gratified. This is perfect *qualitative* happiness. At length his superior intellect enabled him to overcome the many external obstacles which operate to restrict other species to their existing numbers and local areas, and multiplication and territorial expansion ensued. At a certain point there began to be internal obstacles to his further increase, scattering him in all directions beyond the domain assigned him by nature. At a certain density gregarious existence became intolerable from the conflicts of fierce passion guided to satisfaction by a high degree of sagacity which effectually checked his increase and unsettled liberty by perpetual fear. No one knows how long the equilibrium was thus kept up, and the excess of births overcome by internecine slaughter. Certain it is that sooner or later human sagacity found a partial remedy from the horrors of anarchy in the invention of government, the primary function of which was, as we saw, to restrain, and to prevent one individual from depriving another of his liberty; in the performance of which function it has itself succeeded in depriving both of much of their liberty. Thus it has robbed man of half his freedom to prevent him from robbing himself of as great a portion at a far greater sacrifice By withholding his liberties it has fostered his growth and enabled him to people every continent and every zone. It has also rendered intellectual progress possible, and this has actually gone on, till to-day he finds himself almost again in sight of his pristine liberty. The paradise he lost through his wisdom, he is now about to regain through his wisdom. The simple but primitive state will be exchanged for a complex but enlightened state. As he was once truly happy in a state of anarchy, so he will again be happy when he shall again attain to a state of anarchy. But the difference will be that the former was the unconscious anarchy of ignorance, while the latter will be the conscious anarchy of intelligence.

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* Darwin, "Journal of Researches," etc., p. 229; Spencer, "Principles of Sociology," vol. i, p. 69.

ELIMINATION OF THE ILLEGITIMATE FUNCTIONS OF GOVERNMENT.

To return to the question as to why governments are necessarily odious. We have seen that this is primarily because all governments are founded on the principle of prohibition, which, however properly or rightfully, implies the diminution of human liberty. If, through increased intelligence, government shall ever learn to employ the indirect method in lieu of the direct, which is the basis of all prohibitory legislation, and to apply the faculty of genius, or ingenuity, to the working out of a system of *attractive legislation*, a great degree of protective and even restrictive power can doubtless be exerted without reducing the sum total of liberty. But this question will be considered a little later. We must cling a little longer to government with only its present attributes.

Considering the enormous influences which operate to render the holders of power indifferent to the justice of the cases over which they are called upon to exercise that power, it is not too much to say that their decisions are no more apt to be founded on justice than were the original desires of the parties restrained; and thus the difficulty is at least doubled when we lay aside our hypothesis, according to which all governmental restraint was assumed to be just, and take the imperfection of the protectorate into the account. If, for example, government should render itself odious to one third of the people when its decisions are all just, it would render itself odious to two thirds of them if half of its decisions were unjust, because then one half of the cases of attempted protection might have been left to adjust themselves. I would not be understood to imply that this would be mathematically true, but only that it serves to point out the manner in which any attempt to control the people must render the controlling power odious, and this in a degree proportional to the justness of the acts both of the governing and of the governed.

It has already been remarked that this control is always claimed to be exercised for the protection of the people. So far as it really is so exercised, it is a legitimate function of government; and comes logically within the meaning of the term "protection," as one of the component elements of the general notion of government which we are at present analyzing. But all outside of, or beyond this, whether claimed or even sought to be brought within it or not, belongs to the other component, to the element of arbitrary restraint.

It is this attribute that is every-where most abundant and most apparent in all the governments which man has established. I need not mention those efforts which have been and are constantly being made with a real intention on the part of government to secure the rights of the people, but which fail from ignorance or undue zeal to accomplish that end, although that there are many such is attested a thousand times by history, and those acts of power which were exercised and applauded in one century are denounced if they can not be repaired in the next. I need only speak of such as come quite outside of any definition of protection, and result solely from the desire, coupled with the opportunity, to strengthen and aggrandize the governing class. There is always a pretext for all such acts, and the people are easily made to believe that it is for their interest to obey them; yet they are all pure usurpations, and serve as illustrations of the tendencies of governmental restraint. Were particular examples of these acts required, they are every-where to be found. The existence of standing armies in every country of the globe is perhaps the most familiar one. The alleged necessity of standing armies usually has no better basis than the desire of certain persons to protect themselves in the right to rule over certain tracts of country and certain peoples. This is the justification of war. It certainly is not for the interests of the people to have their fields laid waste, their houses burned, their means of subsistence taken away, their relatives and friends shot down, and their own lives sacrificed. These things standing alone, as the immediate and inevitable incidents of war, can not certainly be urged as contributing to the happiness of any people. And yet this is absolutely all they receive in return for waging it. The mechanic of England can certainly derive no satisfaction from the destruction of a Frenchman's vineyard and his impoverishment and ruin. It is not the happiness of the masses that war tends to promote. No one will claim that Europe —*i. e.*, the people of Europe—taken as a whole, are better off after a long war, which only offers in exchange for the blood that has been shed, and the industry that has been crushed out, an alteration in some slight particular of the boundaries of the political divisions. And if it be urged that one people is compelled to go to war to prevent foreign powers from destroying its government and establishing a worse one over them, this only shifts the question from the invaded to the invader, and it has now only to be asked, What advantage is it to a people to extend their government by war over other nations unwilling to accept it? Thus, by carrying it back, the objection proves to be wholly imaginary, as far as regards the welfare of the people, and can only be seriously raised by kings and rulers.

This element of government, being wholly unnecessary and prejudicial to the interests of the people, is the one which they most need to rid themselves of, and the one they will undoubtedly first shake off. Precisely how long it will be before any one people will have fully succeeded in accomplishing this object can not, of course, be predicted. That none has thus far done so can be safely affirmed. Success in this direction must depend entirely upon the intelligence of the people. In them ultimately lies all power. This assertion, it is true, is trite, but, often as it is made and repeated, very few realize its full meaning. It means this: If all the people *knew* what course of action was for their best interests, they would certainly pursue that course. It is not for their best interests to support the usurpations of the governing class; therefore these usurpations would not be supported. No usurpation could possibly be practiced unless supported by the force of some portion of the people. Consequently, if no portion of the people were ignorant of their own interests, there could be no usurpation. An army is no less a portion of a people than is a sheriff's *posse.* Yet it is armies almost altogether that enable despots to carry out their schemes of self-aggrandizement. And not unfrequently the *posse comitatus* performs the same office. So long as people in the capacity of soldiers or civil officers stand by and uphold by force the acts of cunning rulers, devised to increase their power or their revenues at the expense of the masses who include these same soldiers and officers, so long will there be usurpation, oppression, and war. This is simply a law of human nature, and can not be prevented by moralizing. It is unphilosophical to attribute it to the wickedness of rulers. This method of vituperation and denunciation has been long tried, and has wholly failed. Were the places of the censured and the censurer reversed, the case would be unaltered. Human nature is uniform. Like causes produce like effects in social as in physical phenomena. If, then, we can not blame the oppressor, shall we blame the oppressed? Certainly not. To blame is useless. Against this fixed and immutable law of nature there must be set up the artificial barrier of universal knowledge. The law will not cease to exist, but the circumstances would then be changed. If the inclination is not removed, the power is taken away, and the problem is solved; for, however great the desire, it can not be gratified without the power to gratify it. If a king issues an oppressive decree, and the subjects refuse to obey it, and the soldiers refuse to enforce it, what becomes of tyranny? Its "occupation's gone." And if all these know it to be contrary to their own interest, that they will thus act is as certain as that the king will seek *his* interest, since it is governed by the same law. There is then a prospect, and a comparatively near prospect, of eliminating from human government this element of restraint, and of changing it from the nature of *government*, which it now possesses, into that of a protectorate, pure and simple.

Let us now see how this second element is to be eliminated. The condition of society is not such as to need the control of a government, but it is certainly such as to require the supervision of a protectorate. There is no country on the globe in which there are not found some persons who have not yet sufficiently emerged from barbarism to render justice to their fellows in all cases, and to refrain from injuring those who happen to cross their path. It is for these and for these only that a protectorate is required: it can be dispensed with as soon as such characters cease to exist in society. The question, therefore, of how long the world will need a protectorate is the same with that of how long there will be dangerous persons in society. The common notion that this must always be because man is imperfect, is untenable, and will so appear upon a slight examination. It assumes that a person, because he is not perfect in all things, must necessarily be liable to commit crime; that is, every one must be thus liable. Yet how false is this, considered in the light of facts! Is there then no one who is not liable to commit crime? Can you cast your eyes about you and fix them upon no single individual who has ever come within your knowledge or observation, whom you do not hesitate to pronounce entirely harmless? On the contrary, who can not select hundreds from among his neighbors, acquaintances, and friends, whom he does not regard as in the least dangerous to society? Can he not enumerate many who, though possessing foibles and imperfections in common with all mankind, might yet be trusted among their fellows without the least risk of property, life, or limb? Let us come nearer home. Does the reader himself entertain any apprehension that society would be likely to suffer from violence at his hands, even if there were not a penal statute nor an executive officer in the land? Does he not feel that it is not for him that all these laws were framed? And while he may willingly confess himself imperfect, will he admit that he therefore needs to be put under restraint to prevent him from disturbing the peace or violating the rights of society? Yet can he assume that he constitutes a solitary exception in his entire community? Probably not. It is *not* true that all men are dangerous; that all need to be forcibly restrained to prevent them from injuring one another. It is only a very small part that occasion the necessity for penal law.* The other part must tolerate it as less grievous than the dangers which its absence would involve. Yet this is the boasted liberty which so many great writers have extolled, liberty regulated and limited by law. Some have even said that this is all that liberty means.† Such liberty means that the innocent must suffer for the guilty; that because a part of society is depraved, the rest must have onerous and odious laws enacted, which, though made for their protection, take away half their liberties and destroy much of their happiness.

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* Few attempts have been made to determine the proportion of the population properly to be regarded as belonging to the criminal classes. Statistics of this kind have recently been compiled in the State of Indiana, and may be found published in the "First Annual Report of the Bureau of Statistics and Geology of Indiana," page 442, according to which there exists in that State one such person to every 145 inhabitants. This includes prostitutes. The chief of the Bureau makes the following suggestive comment upon these statistics: "For this small portion of our population all our criminal laws are made."

† Blackstone's "Commentaries," Introduction, p. 6; Cousin, "Du vrai, du beau, et du bien," Leçon 15, p. 393.

Such laws are necessary, not because man is imperfect, but because *some* men are *very* imperfect.

The questions remain, What proportion of society is thus depraved? How large a part of society need no law to restrain them from injuring others? This differs in different countries, and in different parts of the same country. Taking the civilized world in its *ensemble*, the two classes are perhaps equally divided. Taking the most enlightened parts of it, the dangerous element is reduced to a small fraction. Not to speak of enlightened England, cultured Germany, and scientific France, there are doubtless towns and counties, and perhaps whole cities, in the United States, where only one man in a hundred could be induced to commit a crime against his fellow-man. Every one's reflection and recollection will verify this conclusion. And it is only for the sake of these few that all must bear the burdens of government. How can these seeds of dissension be removed from the body politic? In the same manner that the class now harmless have been rendered so. In the same way that you and I have been lifted out of savagery and barbarism into civilization and enlightenment. They must simply be civilized. They are no worse than we are. "All men are created equal." I doubt whether even Jefferson felt the full import of that truth. "He builded better than he knew." The inmates of our prisons are but the victims of untoward circumstances. The murderer has but acted out his education. Would you change his conduct, change his education.

When man has succeeded in eliminating from government its two elements, control and protection, what will be left? That of accommodation. And must this, too, be finally winnowed away by the great fan of intelligence? No. It must remain. It can never be dispensed with. The reason in this case *is* because man is imperfect. He is neither ubiquitous, omniscient, nor omnipotent: hence he needs agents to transact business in localities where he can not be;

to acquire skill and dexterity in subjects with which every one can not afford the time to acquaint himself; and to perform duties by means of organization which individuals, acting independently, would not possess the strength to perform. In short, society needs and must always have an organized agency to represent it.

This organization, however, would, in an advanced state of society, represent society in fact as well as in name. It would be the servant of society instead of its master, as is now the case even with those governments which call themselves representative. It would, moreover, represent the whole of society and not a class, or to the exclusion of any class; that is, every adult person would have a voice in the instruction of its agents; and though, as it would seem must always be the case, many of the measures adopted would be objectionable to some, still it supposes a state of general enlightenment which would be incompatible with the possibility of any disturbance of the public tranquillity from causes of this nature.

Governments, as at present constituted, may be compared to certain large stock companies. Instead of being managed in the interests of the stockholders, they are managed in the interests of the officers. In stock companies this is apt to be the case in proportion to the number of stockholders and the smallness of each one's interest. Thus, in an insurance company in which each policy-holder is in a sense a stockholder, these generally know and care nothing about the way in which the company is managed, so long as it is kept sound, and, if they felt an interest, they would have no power to influence its policy. Government is such a stock company with millions of stockholders whose individual interests are very small, or at least are so regarded by them; hence opportunity to manage this company in the interests of the directors is almost unlimited. Those who imagine that representative governments form an exception to this law, simply illustrate the ease with which stockholders are deceived.

Progress in government, therefore, considered simply as an institution for the accommodation of society, must be in the direction of acquainting every member of society more thoroughly with the special nature of the institution, and awakening him to a more vivid conception of his personal interest in its management.

Thus far we have considered government such as it actually is, and such as history shows it to have been in all the past known to us. It has always possessed the three distinct attributes of restraint, protection, and accommodation; no government being so rude as wholly to want the last, or so perfect as to have wholly dispensed with the first, while the second has ever constituted both the apology for, and the *raison d'être* of, the institution itself.

In this capacity government occupies a peculiar attitude toward the true progress of mankind, contributing to it only indirectly as a conserver of the really progressive elements of society, while at the same time reacting directly and powerfully against it in restraining human liberty and in so far diminishing human happiness. Yet these opposing influences are incapable of comparison, with a view to ascertaining the resultant, since they are, as it were, of different denominations. An indirect influence can not be compared with a direct one, and the nature of the former has been such in this case that there is no other standard by which its importance can be relatively ascertained. This much at least must be said for it that, in its *rôle* of protector, government has been indispensable to progress, *i. e.*, though it has not been a promoter, it has certainly been a *sine qua non* of it.

We have seen that in the institution as it now exists, and has existed in the past, no directly progressive element can be found. As was shown at the outset, the popular view to the contrary is wholly erroneous. The importance of the phenomena attending government is greatly overestimated. Political events, military *dénoûments*, and the services and achievements of great men, which make up the bulk of what is called human history, are really of little consequence, and in most cases might as well have been the opposite of what they were. The idea which many entertain, that but for just such little triumphs as have happened to occur, the world would have been a blank, is extremely puerile. Even if it be true that the battle of Tours decided the question whether Mohammedanism or Christianity was to be the prevailing religion of Europe, nevertheless, it was a question of minor importance which way that battle was decided. The people of Europe would have been the same people, whether they worshiped in a mosque or in a cathedral, whether they followed a crescent or a cross. A few of the names and dates of European history would have been changed, the imaginary lines which bound the present political divisions might have occupied different positions on the map, and other minor differences would have been seen throughout the rest of Europe's history; but whether more or less true progress would have resulted is a problem which no one will ever be able to solve. The time will come when not only this event, but all the political events of modern history, including those of the immediate present, upon which most men think all future progress is to depend, will be looked upon as we now look upon the political events of ancient Greece in the time of Demosthenes. Human progress depends upon deeper laws, and would not have been arrested had there never lived a Wellington or a Washington. In fact, most historic events represent the resultant of opposing forces in society, often nearly equally balanced, so that the triumph of the opposite party would, in most cases, have given about the same degree of satisfaction as did the actual event, and it is generally impossible to say which would have been upon the whole best for the race. These political events so intimately related to government may be aptly compared to the meteorological phenomena which are constantly taking place upon the surface of the earth. Areas of low barometer are generated, clouds are formed, storms follow one another across ocean and continent, winds rage at times, tornadoes and cyclones devastate the land; then calm ensues, and sunshine gladdens all hearts. The elements have the appearance of being at war during the greater part of the time, with fluctuating successes sometimes on one side and sometimes on the other. Yet a retrospective view shows that the corresponding seasons of different years do not materially differ, and the state of the world, meteorologically considered, is the same now that it was a century or ten centuries ago. The most violent storm has had no influence in altering the general identity of all seasons and all years. If, in fact, as modern science seems to teach, there is going on a slow and imperceptible change of climate upon the earth, this is not due to the character of visible meteorological phenomena, but to vast cosmical processes, either astronomical or geological, working secular changes in the former, and producing a succession of glacial epochs in one or both hemispheres, and perhaps shifting the preponderance of land from one hemisphere to the other.

If we can compare the meteorological phenomena of climate to the governmental phenomena of society, so we must compare the influence of these cosmical processes to that of the several progressive agencies considered in the early part of this chapter.

AMELIORATIVE FUNCTION OF GOVERNMENT.

From actual government we will now pass to possible government. While considering the accommodative element of government, it was remarked that in some directions this function closely approaches the ameliorative. That it has never actually reached it can not be affirmed. But it may safely be said that if government has ever directly improved the condition of society, or given it a progressive impulse, it has been from strictly empirical motives. Government has never recognized the existence of social forces, or made them the object of scientific study, with a view to systematically controlling and directing them.

There are now in society two opposing classes of political economists, both of which profess to represent the scientific method in government, neither of which, however, at all understand the precise manner in which science promotes civilization—viz., through invention. Neither have ever made the test comparison of legislation with mechanical invention. Both fail to look upon legislation as an art, resting, like all other arts, upon science, and capable of as much higher development when based upon a systematic acquaintance with natural phenomena and laws than when based upon a superficial acquaintance with a few special ones, as other forms of art are capable of higher development when based on methodical science than when based on an incoherent empiricism. And yet both arrogate to themselves the title scientific. This, of course, is natural enough.

Respectability has its disadvantages. Whenever any thing becomes respectable, it is certain to have its name appropriated. This is particularly the case at the present time with science. There is nothing now so respectable, and hence it has become the fashion to call every thing by that name. In view of this tendency, it would be desirable to have a definition of science. It would be important to have some definite test by which true science could be distinguished from pseudo-science.

Perhaps the most successful attempt thus far made to establish such a test was that of M. Auguste Comte. He maintained that the power of *prevision* is the attribute by which science is to be uniformly distinguished from mere *erudition* * on the one hand, and from the mere accumulation of data on the other. This generalization is only slightly enlarged by saying that science is distinguished by making knowledge a means to some end instead of an end in itself. This is undoubtedly the true view, and it loses nothing of its verity because its application not only sweeps away all the charlatanism and dilettanteism that now go by the name of science, but presses hard upon much of the specialism, always so prevalent, which has latterly set itself up as constituting science *par excellence* (vol. i, p. 23).

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* "Philosophie Positive," vol. ii, p. 20; vol. iii, pp. 8, 211, 212.

Among those addicted to "stealing the livery" of science to lend respectability to their work, should probably be mentioned first the so-called moral-science writers. Their works usually indicate that the authors have no just conception of what science or the scientific method is. Next after these the "social-science" writers and workers are doubtless most clearly open to this charge. This class is perpetually hovering about the confines of true social science, without ever fairly entering its territory. The proceedings of the social science associations show that their labors are confined to the most derivative and superficial results of the operations of social laws, such as questions of finance, private charity, houses for operatives, eleemosynary schemes, etc. These belong to economics, police regulation, etc., and do not deserve to be called social science. They are important practical matters of administration, no doubt, but they are not science.

Another mark of a real science is that it must embrace the two stages, the *pure* and the *applied*. All existing sciences possess these. It is the practical service that science has done which renders it so highly respectable, but this has only been possible in the applied stage. The object of pure science is to *predict*. "*Voir pour prévoir*," says M. Comte. But the object of prevision is application.* The pure and applied stages of a science are both equally essential. Without the pure stage all attempts at application must be wholly at random. On the other hand, pure science alone must remain for ever useless.

It is a remarkable fact that both of these apparently self-evident propositions seem to be widely ignored. On the one hand, we find a prevalent belief respecting some of the less complex sciences, that their chief or only value consists in an acquaintance with their pure principles and facts; while, on the other hand, we find with respect to the most complex sciences, such as morals and sociology, a constant effort to apply principles for the establishment of which no data have yet been collected. This is all very paradoxical, inasmuch as it is precisely the reverse of that which would naturally be looked for. What is needed, therefore, seems to be—in the lower sciences, more attention to the applied stage; in the higher sciences, more attention to the pure stage.

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* "Philosophie Positive," vol. i, p. 51.

It was doubtless this anomaly which prompted Kant to make the bold proposition to establish a science of *pure morals*.[*] This proposition has not been responded to, however, and we can not be said to have any moral science yet.[†] But against the superficial treatment of the social phenomena there has been a strong reaction, and the principles of pure sociology have been in a great measure formulated. Like all reactions, however, this one has carried its advocates too far. In their intense sense of the lack of data and of laws, they have forgotten that these, when secured, are properly but the means to the same end which their opponents are vainly seeking to attain without them. And thus we have the singular spectacle presented in the field of social science of one class applying erroneous principles in ignorance of true ones, while insisting that this is all of social science; and another class collecting data and formulating laws while declaring that this constitutes the only true method of sociology. The one class insists that there can be no pure social science, the other that there can be no applied social science.

In one sense natural economic laws can not be controlled,

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[*] "Kritik der reinen Vernunft," S. 340, 533.

[†] Mr. Spencer's "Data of Ethics," which has appeared since this was written, goes far to supply the want here designated, in pointing out clearly for the first time that morals, as popularly understood, consist of mere rules for healing a diseased condition. His "Absolute Ethics" must be regarded as the basis of the pure science.

i. e., they can not be arbitrarily created or destroyed; their essential nature can not be changed. In these respects, as in all others, they are identical with the physical, or mechanical, laws with which inventors have to deal. But in another sense the former as well as the latter can be controlled, *i. e.*, they can be guided by means of artificial devices into channels which they would not otherwise take, and made to expend themselves upon other objects than those upon which they would naturally expend themselves; they may be distributed, or divided into any number of parts, and thus diminished in their intensity or practically destroyed; or they may be condensed or intensified to any required degree. In short, whatever dispositions may be made of other natural forces by man and under the influence of intellectual insight, may in like manner be made of the social forces. Therefore, if government could be in the hands of social scientists instead of social empiricists, it might be elevated to the rank of an applied science, or the simple application of the scientific principles of social phenomena.

As a scientific investigator, the legislator would then set for himself the task of devising means to render harmless those forces now seen to be working evil results, and to render useful those now running to waste. Not only would the present prohibitive legislation, which seeks to accomplish its ends by the direct, or brute, method, be rapidly supplanted by attractive legislation accomplishing its purposes by the indirect, or intellectual, method, and thus fulfilling the protective functions of government at a saving of enormous loss through the friction of opposition, but the accommodative function would now be in condition to advance toward the position of a truly ameliorative one. Society, possessed for the first time of a completely integrated consciousness, could at last proceed to map out a field of independent operation for the systematic realization of its own interests, in the same manner that an intelligent and keen-sighted individual pursues his life-purposes. Not only would protection and accommodation be secured without loss of liberty and at the least possible cost to society, but directly progressive measures would be adopted looking to the organization of human happiness. Fully realizing the character and mode of operation of the truly progressive agencies of society, government would not simply foster and protect these, but would increase and intensify them and their influence. No longer doubting that progress upon the whole must be in proportion to the degree and universality of intelligence, no effort or expense would be spared to impart to every citizen an equal and adequate amount of useful knowledge.

Briefly to formulate the underlying principles of this discussion, we may add in conclusion that, strictly speaking, no influence can be progressive which is not in itself a true art. Existing government, though artificial, is not itself an art. It can not, therefore, become a progressive institution until there are impressed upon it the marks which distinguish a true art. The arts are not merely conservative, but creative. They not only preserve, but produce. They do not leave matters where they find them, but carry them a stage higher. Conservative institutions, such as actual government, like the disturbances of the atmosphere or the tides of the ocean, after having gone through a cycle of changes, return to the same conditions as before they began. In creative institutions, such as are the inventive arts, the rhythm is an advancing one. By however little, the flood exceeds the ebb, and society moves. They are dynamical, not statical forces.

Moreover, whatever is not progressive must be retrogressive. There is no such thing as absolute rest. Conservative institutions, from their very nature, impose restraints upon progress. Conservation implies limitation. The forcible curbing of the centrifugal tendencies of progressive institutions involves great loss through friction, and this loss, however necessary to the existence of such institutions, is, considered in itself, an expense to progress.

If we look back over the history of language, literature, art, and science, we perceive that they have each been building from the outset. Gesture language, oral language, written language, printed language, telegraphic and telephonic communication—these are the rounds of the great ladder which the art of intercommunication has erected, and upon which society has ascended.

From the humble foundations with which inventive art began have arisen the various modes of securing and increasing the means of subsistence. The predatory, the nomadic, the pastoral, the agricultural stages followed one another, supplemented by the enormously multiplied mechanical appliances devised for the elaboration of the products of industry.

For government there exists no such record. When we remember that it is designed to conserve whatever interest society may possess, it seems not too much to say that the most advanced governments of the world are less perfectly adapted to their highly complicated functions than are the least advanced governments to the simplicity of the interests intrusted to their charge. Government, therefore, is not only holding society back, but is itself going backward.

It therefore becomes the interest and the duty of society, throwing off the yoke of *government* in the odious sense of this ill-conceived term, to establish a truly progressive agency which shall not only be a product of art, but shall itself be an art. This institution, like all true arts, must be based upon the recognition of the reality and reliableness of the natural forces with which it is to experiment, and whose laws it is to utilize. These forces are the social forces as defined in a previous chapter (vol. i, p. 472). The science which treats of them is sociology. The art which consists in their application may still, for want of a better term, be called government. But the present empirical, anti-progressive institution, miscalled the art of government, must be transformed into a central academy of social science, which shall stand in the same relation to the control of men in which polytechnic institute stands to the control of nature.

RELIGION.

There is one other agency whose influence has been powerfully felt in human civilization, but whose character, from the point of view of this chapter, is so exceptional and anomalous that it has been found impossible to introduce it in the regular course of the discussion.

Its importance, however, demands for it a somewhat careful treatment, which it must receive in this place, and which must be somewhat in the nature of an episode, or independent discussion.

This influence will be best recognized under the somewhat vague and exceedingly ambiguous name of *Religion*.

Before a word can be said, however, respecting the true position of religion among the various influences which have affected human progress, this vagueness and ambiguity which attaches to the term must, as far as possible, be removed, and a definition be found which shall fix with some precision the particular thing of which is predicated whatever shall be said.

Let us begin with a brief enumeration of some of the definitions which various authors have given to the word "religion."

Immanuel Kant evidently regarded religion as having for its sole basis the idea of immortality, and he fixes its place in philosophy in the following characteristic language: "Metaphysics has for the proper object of its investigation only three ideas—God, Freedom, and Immortality, so that the second conception combined with the first shall lead as a necessary conclusion to the third. . . . The understanding of it would make theology, morals, and, through a combination of both these, *religion*, that is, the highest object of our existence, dependent solely upon the speculative power of the reason and upon nothing else." *

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* "Kritik der reinen Vernunft," S. 271.

A well-known modern English writer, the Rev. T. W. Fowle, in an article in the "Contemporary Review," 1872, on "Science and Immortality," without seeming to be acquainted with Kant's views, after considerable discussion, comes to the conclusion that for all practical purposes "religion is synonymous with immortality," and adds, "If, for any reason, mankind does, at any time, cease to believe in its own immortality, then religion will also have ceased to exist as a part of the consciousness of humanity."

Mr. Edward B. Tylor, probably the foremost ethnographer of the age, goes deeper into the question, and, while admitting the impossibility of fixing upon any one term or expression which adequately represents the essential attributes of all religions, nevertheless ventures to give what he acutely denominates a "minimum definition," which is simply "the belief in Spiritual Beings." * This view he elaborates in a masterly manner in the seven chapters on "Animism" of his most able and admirable treatise on "Primitive Culture."

Sir John Lubbock, who has also given this subject much consideration from the ethnographical (which is the only truly scientific) point of view, has endeavored to co-ordinate the facts pointing to the genesis and nature of religion as a human institution. He says that there certainly are races so low in intellectual development as to possess nothing that can be dignified with the name religion. "If," says he, "the mere sensation of fear, and the recognition that there are probably other beings more powerful than man, are sufficient alone to constitute a religion, then we must, I think, admit that religion is general to the human race." But he properly adds that, "if this definition be adopted, we can no longer regard religion as peculiar to man. We must admit that the feeling of a dog or a horse towards its master is of the same character; and the baying of a dog to the moon is as much an act of worship as some ceremonies which have been so described

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* "Primitive Culture" (London, 1871), vol. i, p. 383.

by travelers."* He thinks that the conception of a deity or some overruling, unseen power is the most reliable test of religion, and, rejecting the ideas of De Brosse and the classification of Comte and others based on the nature of the object worshiped, which set out with fetichism and rise through Sabæism to polytheism and monotheism, he establishes a new one, of which the grades are as follows:

1. *Atheism*, by which he means, as the proper etymology of the word requires, simply an absence of theology, which, if theology is the fundamental idea, must be equivalent to an absence of all religion.

2. "*Fetichism;* the stage in which man supposes he can force the Deity to comply with his desires."

3. "*Nature-worship*, or *Totemism*, in which natural objects, trees, lakes, stones, animals, &c., are worshiped."

4. "*Shamanism*, in which the superior deities are far more powerful than man, and of a different nature. Their place of abode is far away, accessible only to Shamans."

5. *Idolatry*, which he makes equivalent to anthropomorphism; in which the gods more nearly resemble men, but are more powerful. They are still a part of nature and not creators, and are worshiped through images or idols.

6. *Theism*, *i. e.*, "Deity is regarded as the author and not merely a part of nature."

7. *Theism joined with morality*, a stage "in which morality is associated with religion."†

Sir John Lubbock, therefore, evidently places the idea of a god before the idea of a spirit in his view of the essential basis of religion.

Alongside of this effort of Sir John Lubbock to classify religions according to a natural system should be placed a similar effort by Major J. W. Powell, Director of the United States Bureau of Ethnology, and also of the Geographical Survey, a careful student of American ethnology, mythology, and philology.

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* "Origin of Civilization," p. 121.

† *Loc. cit.*, p. 119.

According to Major Powell's system, as unfolded in his address as Vice-President of the American Association for the Advancement of Science, at its annual meeting at Saratoga Springs in 1879,* mythology forms the first great division of philosophy, the scientific determination of phenomena constituting the second. This mythologic division has four successive and natural stages, which he denominates respectively: 1, *Hecastotheism;* 2, *Zoötheism;* 3, *Physitheism;* and, 4, *Psychotheism.*

This classification, it will be seen, like that of Sir John Lubbock, is based chiefly upon the nature of the theology by which it is dominated. In hecastotheism, as its name denotes, all things whatsoever are not only animated but deified. This stage, therefore, may be said to embrace all the others, but in just that confused and undifferentiated way that evolution shows to characterize the initial steps in every process, from the homogeneous to the heterogeneous. Not only are "stocks and stones," trees, lakes, mountains, and rivers worshiped and turned into gods, but so are also animals, stars, and, so far as they can be conceived of by such peoples, the invisible powers of nature; this stage thus overlapping the second and third stages, and only missing the fourth from the inability of the human mind, in this period of its development, to grasp abstract mental, moral, and social attributes.

In the second stage, or zoötheism, men and beasts are classed together upon a perfect equality and worshiped as animated deities. "All the phenomena of nature are the doings of these animal gods; all the facts of nature, all the phenomena of the known universe, all the institutions of humanity known to the philosophers of this stage, are accounted for in the mythologic history of these zoömorphic gods." The process of differentiation from hecastotheism to zoötheism has resulted in segregating really animated beings from the mass formerly regarded as animated, and limiting the tendency to worship to this definite class. This, again, is in the normal direction of evolution, as exhibited in every other department of nature.

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* "Proceedings," vol. xxviii, p. 251.

In physitheism, the third stage, "the animal gods are dethroned, and the powers and phenomena of nature are personified and deified. The gods are strictly anthropomorphic, having the form, as well as the mental, moral, and social attributes, of men. Thus we have a god of the sun, a god of the moon, a god of the air, a god of dawn, and a deity of the night."

In this stage, beyond the elevation of the class of objects contemplated, there is little change except the conversion of the animal forms and attributes into human. But, as in zoötheism men and animals were confounded under the less definite conception of animated beings, it follows that the passage from zoötheism to physitheism really consisted in the simple differentiation of the conception of humanity, as the higher form of animation, from that of animation in general. Here, again, we have true and typical evolution.

In psychotheism, the fourth and latest stage of mythologic philosophy, "mental, moral, and social characteristics are personified and deified. Thus we have a god of war, a god of love, a god of revelry, a god of plenty, and like personages who preside over the institutions and occupations of mankind. . . . Psychotheism, by the processes of mental integration, develops in one direction into monotheism, and in the other into pantheism."

The transition from physitheism to psychotheism, therefore, is simply the selection, or segregation, from the confused notion of animation in general, and from the more definite but still confused notion of human animation, of the still more definite and higher notion of rational animation such as belongs only to the phenomena of mind. The progress of evolution is, therefore, no less normal here than in the three preceding steps.

Major Powell's system is, therefore, not only strictly logical, but is in complete conformity with all that is known of the laws of evolution. Had it not been elaborated by a well-known practical ethnographer in the very wigwams of the savages, where he has listened long to their simple stories of legendary cosmogony, it might have been accredited to the fertile brain of a closet evolutionist.

His terminology, however, is not strictly consistent or logical throughout. The golden thread that runs through the system and binds it into a whole is not the object of worship in itself, but the attributes of that object. Hecastotheism, in its vague simplicity, is the worship of life: not the biologist's idea of life, but that of the savage, to whom its characteristic quality is *voluntary motion*. This conception has never been so well expressed as by Mr. Tylor in his judiciously chosen term "animism." Again, in zoötheism, the real object is not wild beasts, but the now developed and sharply differentiated conception of life as it is manifested in animated nature, including human life not yet differentiated. The term zoötheism, however, may be made to denote this conception by supposing it to reach back to the primary sense of its first component, ζωός, *alive*.

But physitheism can not be thus reconciled, and indeed the worship of natural objects is, logically considered, only an incident of the transition. The real change has consisted in the differentiation of the anthropomorphic out of the previous zoömorphic deities. The logical and consistent name for this stage would therefore have been *Anthropotheism*.

It is not until he reaches the fourth stage, psychotheism, that Major Powell touches the key-note of his system in the matter of terminology. But here consistency should have admonished him to choose a term like the preceding ones, which should express the concrete object of worship and not its attribute. As it is not these mental qualities which are directly worshiped in this stage, but gods endowed with them, perhaps the simple term *theism* would be as appropriate, from that point of view, as could be found.

A completely logical terminology of Major Powell's system, based on the conception of mythology, or primitive religion, as a product of evolution, would, as compared with his, stand as follows:

Stage.	Terminology of Major Powell.	Logical Terminology.
1.	Hecastotheism	Animotheism, or Animism.
2.	Zoötheism	Zoötheism.
3.	Physitheism	Anthropotheism, or Anthropomorphism.
4.	Psychotheism	Psychotheism.

To avoid neologism, unless the importance of making the name of each stage distinctly convey the theological conception in its composition is considered primary, the terms Animism and Anthropomorphism may be substituted for the more logical but thus far unused terms Animotheism and Anthropotheism.

Let us next consider the views of Mr. Herbert Spencer.

To do this it will be necessary to look at religion from two quite different points of view, which we may distinguish as the theoretical and the actual. From the theoretical point of view, in the opinion of this author, "religion under all its forms is distinguished from every thing else in this, that its subject-matter is that which passes the sphere of experience."* In other words, religion is based upon the idea of the "unknowable." It turns out, as knowledge increases, that much that had formerly been supposed unknowable, and therefore within the sphere of religion, becomes known, and passes into the sphere of science; but, however far this process may extend, there will ever remain a field which science can not reclaim, but which must always belong to religion. This field, which the laws of thought declare to be necessarily the domain of the unknowable, is the region of the Absolute and Unconditioned of the metaphysicians, and religion must therefore ultimately rest upon what the latter have distinguished from phenomena by the name of *Noumena*, which conception appears further to be equivalent also to that of deity.

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* "First Principles," p. 17.

This appears to me to be Mr. Spencer's idea of the theoretical nature of religion in the abstract.

With regard to the actual nature of religion, as exemplified in the various races of men, Mr. Spencer agrees more nearly with Mr. Tylor than with Sir John Lubbock. Indeed, his "ghost theory" differs little in itself from the "animism" of Tylor. Mr. Spencer, however, has ideas of his own respecting the origin of the belief in spiritual beings which are very entertaining. He considers ancestor-worship as the basis of all the higher forms of worship, and this to grow out of the belief in the persistence of the spirit of dead ancestors. With Mr. Tylor, he traces the belief in spiritual beings to the notions early entertained by savages respecting a double self, suggested by such familiar phenomena as shadows, echoes, reflections, dreams, swoons, epilepsy, apoplexy, etc. He argues forcibly against the natural direct origin of any of the definite forms of religious belief, and maintains that they have all arisen from ancestor-worship in indirect ways—the fetich, plant, animal, star, or imaginary deity having in all cases represented, more or less immediately, the tribal ancestor whose name and attributes it bears. If this view be correct, government must in all cases have antedated religion, and he adduces many cases in support of the view that, where no form of headship exists, not even fetichism is found. The following passage from the "Data of Ethics" * gives a very complete condensed view of Mr. Spencer's argument: "As fast as the ghost-theory becomes established and definite, there grows up another kind of check on the immediate satisfaction of the desires—a check constituted by ideas of the evils which ghosts may inflict if offended; and when political headship gets settled, and the ghosts of dead chiefs, thought of as more powerful and more relentless than other ghosts, are especially dreaded, there begins to take shape the form of restraint distinguished as religious."

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* Page 116.

Mr. John Fiske has, in his "Unseen World,"* given a somewhat novel definition of the religious sentiment, which he expresses in these words: "All animals seek for fullness of life; but in civilized man this craving has acquired a moral significance, and has become a spiritual aspiration; and this emotional tendency, more or less strong in the human race, we call religious feeling, or religion."

Dr. Alexander Winchell, in his work on the "Reconciliation of Science and Religion,"† enumerates the following elements which he thinks to be common to all religions:

1. A Supreme Being, author of all things.
2. A Revelation of the Supreme Being, either through natural phenomena or inspired men.
3. A system of worship.
4. Prayer, the universal cry of humanity in distress.
5. An idea of a future existence.
6. An idea of moral responsibility.
7. A system of future rewards and punishments.
8. A priesthood clothed with divine authority.

"These facts," he says, "I find to be the constants in the varying faiths of mankind. I will add that two other facts reveal themselves in *most* of the religious systems of the world—both the greater and the less. These are: 1. A belief in the efficacy of vicarious expiation. 2. An expectation of a Redeemer." It is unnecessary to say of this enumeration that it is confined to the higher and derivative forms of religion, and is of very little assistance in the effort to arrive at the essential conditions of religion itself.

Dr. Deems defines religion as a "loving obedience to God's commandments." Bishop Butler maintained that even what is called "natural religion" was originally a revelation. His idea of it was a belief in one God, the Creator and Moral Governor of the world, and in a future state of moral retribution, implying, of course, the idea of immortality. Views of this class, varying in all degrees of superficiality, may be found leading down to the modern religious revivalist's idea of "getting religion," which means getting excited about religion, and ranks along with the self-wrought "ecstasy" of the savage.

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* Page 143.

† Page 21.

In surveying the whole field which we have gone over in search of a definition of religion, we may, I think, clearly discover three leading elements, all fundamental in their nature, which, in the opinion of the most competent authorities, vie with one another for the first place among the true marks of a religious state of the human mind. One of these is the idea of immortality; another, the idea of a spiritual existence; and another, the idea of a God.

A closer scrutiny of each of these, however, reveals a *consensus* in their characteristics, and points to a common conception from which all are deducible. For, on the one hand, the idea of immortality is a rational deduction from the idea of spirit. Of the three, this is the idea which has been least universal. Modified so as to signify simply a future state of spiritual existence whose duration is not determined or taken into account, this belief can be traced much further than can the higher idea of unlimited duration. Still further shorn of its rational inferences until it becomes reduced to the simple notion of a continued existence as spirit after the body has been abandoned, this belief is found to prevail almost universally among the lower races of men. But, in all these gradations of the belief, the persistent part is the notion of a spiritual existence. The branch of the primitive conception of religion which culminates in the doctrine of immortality may therefore be regarded as the *subjective* branch, the individual looking constantly inward upon his own nature and existence.

If we analyze in a similar manner the third fundamental element named — that of deity — we shall perceive that this likewise represents an advanced stage of thought.

For, whether deity be conceived as one or many, the conception involves the notion of spiritual existence. *Nullus in microcosmo spiritus, nullus in macrocosmo deus.*[*] The effort made by many writers to show that a vague form of hierarchy amounting to virtual monotheism pervades all religions, even the lowest, has broken down before the vast accumulations of fact from the philosophies of the lowest tribes of men.[†] The stage is frequently found in which the conception of deity is reduced to the imagined mysterious existence of unnumbered invisible ghosts, malignant and benignant, that fill the air and all space, and haunt the abodes of all the living.[‡] Thus, the conception of deity, like that of immortality, is traced back to the simpler idea of spirit. But here spiritual existence is predicated of the non-ego, so that theology may be properly regarded as the *objective* branch of a primordial religious trunk. This trunk, the parent and essential part of all religion, is therefore the notion of *spiritual existence*, the idea of an invisible and immaterial being, endowed with thought, feeling, and locomotive powers. We must, therefore, credit Mr. Tylor with having, in his "minimum definition," really reached the bottom of the question, and defined religion in all that is absolutely essential to the conception—"the belief in spiritual beings."

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[*] Dr. Henry More, as quoted by Sir William Hamilton in his "Metaphysics," vol. i, p. 32 (Lecture 2). The passage does not occur in More's "Immortalitas Animæ," where it would have been most appropriate, and where the substance of the idea is often repeated.

[†] Kant says: "Daher sehen wir bei allen Völkern durch ihre blindeste Vielgötterei doch einige Funken des Monotheismus durchschimmern, wozu nicht Nachdenken und tiefe Speculation, sondern nur ein nach und nach verständlich gewordener natürlicher Gang des gemeinen Verstandes geführt hat." ("Kritik der reinen Vernunft," S. 404.)

That a tendency is clearly perceptible among fetichistic and polytheistic peoples to organize their deities into a hierarchy, and eventually to integrate the entire system into a monotheistic one, facts abundantly prove (Tylor, "Primitive Culture," Boston, 1874, vol. ii, pp. 258, 332, 335, 345, *et seq.*), but this only illustrates, in the most conclusive manner, the transition from mere spiritism to true theism.

[‡] Tylor, *loc. cit.*, vol. ii, p. 186; Spencer, "Principles of Sociology," vol. i, pp. 200, 209.

Having thus in a manner answered the question, What is religion? there remains the ulterior question, Why do men believe in spiritual beings? This question has been answered in three ways. One of these answers is, that this belief has been supernaturally implanted in the mind of man. Another is, that the phenomena of nature, springing from invisible sources of power, have led man, after the analogy of his own modes of manifesting power, to assume invisible and immaterial beings, in other respects like himself, as the causes of natural phenomena. A third answer ascribes the belief in immaterial spirits, or ghosts, to deductions of the primitive mind based on the experiences of nearly or quite every individual of dreams, epilepsy, mania, trance, etc., coupled with the daily observation by all of such mysterious phenomena as reflection in water, shadows cast by the sun and moon, echoes, etc.

The first of these answers, or the supernatural explanation of the existence of religion, being outside of the domain of science and philosophy, need not be treated here. It may, however, be remarked that this theory is usually urged by those whose idea of religion involves the distinct belief both in immortality and in a fully developed God. But, as already shown, such a developed belief is far from universal, a fact which at least denotes a serious flaw in this mode of reasoning.

Of the two *natural* theories, the first named, or anthropomorphic, theory furnishes the objective, the second, or psychological, theory the subjective explanation of the origin and genesis of the religious sentiment. That either is absolutely false, it would indeed be rash to assert. That both are in a large degree true, is altogether probable. Taken together, these two principles undoubtedly furnish an adequate explanation of this fundamental fact, so prominent in the history of man and of society.

The only remaining problem is with regard to the respective shares which should be allotted to each of these influences in the production of the result. Both lead the inquirer to the conclusion that religion and philosophy have a common root. As Major Powell has well expressed it, "the instinct of cosmic interrogation follows hard upon the instinct of self-preservation." The objective theory is certainly, in so far as it has in fact conduced to the result, a product of mental effort, of thought. It is a philosophy in itself. But so, too, is the subjective theory an intellectual deduction, though certainly of a less elevated and less dignified character. This quality of greater simplicity, however, so far from discouraging its acceptance, is, when properly viewed, in itself a point in its favor. The strongest argument which has been brought forward on this side of the question is found in the fact, so forcibly urged by Mr. Spencer, that the regular phenomena of nature never appear to arouse the wonder of the savage, and that it would seem impossible for a system of philosophy to have sprung up based upon an attempt on the part of primitive man to explain such phenomena. He cites numerous cases in illustration of this fact, and concludes that "direct and indirect evidence thus unite to show us that in the primitive man there does not exist that sentiment which Nature-worship presupposes. And long before mental evolution initiates it, the earth and the heavens have been peopled by supernatural beings, derived from the ghosts, which really draw out his hopes and fears, and prompt his offerings and prayers." *

Having thus sought to attain both to a definition and a genesis of religion—having endeavored not only to point out what religion really and fundamentally is, but also how it

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* "Principles of Sociology," vol. i, Appendix B, p. *x*.

came to exist—it remains to fix its position in the history of human progress.

At the outset, we may certainly say of it, even with more safety than we said it of existing government, that while it is a product of intellectual effort, and therefore artificial, still it is in no proper sense itself an art. This alone would at once relegate it to the class of not intrinsically progressive agencies. Whatever benefits it confers upon the race, therefore, it must either confer directly—*i. e.*, by the application of the direct method of force or persuasion, and not by that of the indirect method of invention and device—or else it must do this in virtue of its conservative tendencies in protecting and preserving the fruits of real progress. To understand this proposition better, let us consider for a moment upon what fundamental elements, subjective and objective, religion is based. Whatever may be the opinions entertained by educated men respecting the nature of spiritual beings as conceived of by the developed intellect, all will no doubt admit that the conceptions of primitive man and those of existing savages, on these questions, were and continue to be grossly false and erroneous. No one believes that the air swarms with vapory phantoms, or that special deities guard the fountains, groves, and highways of modern or of savage countries. The satyrs, sylphs, and undines, the lares and penates, as well as all the higher spiritual beings, in which even the cultured Greek believed, have been swept away, until many students of Greek and Roman literature find it difficult to conceive that these wise peoples really *believed* in their own religion, and it requires such facts as the sacrifice of Socrates to their religious fanaticism to awaken in them a sense of the reality of polytheism as a religion. But just as the believers in God now reject Jupiter and Zeus, in the same manner did the believers in Jupiter and Zeus then reject the far older Jehovah. Mohammed made war upon Asiatic idolatry in the same manner as the modern Christian missionary makes war upon Fiji and Zulu conceptions.

Each religion regards all others as wholly false. Even the different sects of Christendom regard all other sects as embracing fundamental errors. This fact, as already remarked (*supra*, p. 168), standing alone, could lead the disinterested observer to no other conclusion than that all religions are based upon a fundamental error. Let us inquire in how far this conclusion requires qualification from extraneous considerations.

Taking up, first, the subjective view of the genesis of religion, are the premises sound from which the savage and primitive man logically deduces the existence of spiritual beings? Does the reflection of a man's face in a pool really indicate that the man possesses two faces, a bodily and a spiritual face? Does the shadow which he casts, or the echo of his voice, really prove that he has an immaterial double? Does a dream or a trance, in which an *alibi* is proved to the mind of the ignorant but rational savage, really demonstrate that his other self exists and has been wandering about, while all his friends declare that his proper self has remained in the same place? Is there any fallacy by which, on this view, the fundamental conception of religion has been arrived at? All will, of course, admit that the premises are utterly false in all these cases. If, then, the very root of the tree consist wholly of error, is it not reasonable to suppose that the branches and the fruit will partake of the same nature? But, to continue the figure, some may ask, Have there not been choice and valuable grafts added which redeem the primitive bad stock? To answer this question, let us first follow out this subjective or psychological branch which leads to the belief in immortality, and subsequently let us follow out also the objective or theological branch which leads to belief in deity.

From the idea of a double manifesting its existence in reflected images, shadows, echoes, dreams, and swoons, to that of a continued existence, was but a step, and one quickly taken. The link by which these two notions are connected is death. For what is death but an indefinitely prolonged trance, in which the spirit finally abandons the body entirely, never to return to it? The great prevalence of such funeral rites as indicate the belief that the spirits of the dead still exist and linger around the remains of the body, and the spot where it is entombed, shows how readily and universally this little piece of ratiocination has been performed by primitive races. Quickly following upon this, too, has grown up and widely spread over the uncivilized world the doctrine of a veritable future life, usually conceived as similar to this, and not generally thought of as of indefinite duration, the mind not yet grasping so abstract a conception. Among the forms of this belief there is often found the accompanying idea of *location*. This future abode of spirits is, moreover, usually conceived as superior to, though in most respects resembling, the existent one. In the more developed systems, this abode is further differentiated, and the spirits are classified on one principle or another and sent to different regions. The latest development in this direction is the division into an abode of bliss for the good and an abode of torment for the bad—Elysium and Tartarus, Heaven and Hell.

The passage from the idea of a continued future existence to that of an unlimited future existence, though apparently an easy and natural one, has in point of fact proved slow and difficult. As the intellect rose to the capacity of grasping the conception of infinite duration, instead of reasoning at once to immortality, it tended in a large part of the world to reason away the idea of any future existence at all. On no other view is it possible to explain the absence of any true doctrine of immortality in the great Hebrew, Chaldean, Egyptian, and Buddhistic nations of Asia, as well as among the ancient Greeks and Romans. It has only been in the later stages of a few of these religions that this doctrine has at length gained a foot-hold. The teachings of Socrates, as set forth in the "Phædo" of Plato, prepared that corner—

then the most enlightened—of the world for those of Christ, four centuries later; but only half a century prior to the latter date we find Cicero arguing for immortality as if it were a new and unaccepted doctrine, and Cato the younger searching in the "Phædo" for a justification of suicide.

Without discussing here the effect of this belief upon human progress and human happiness, we will simply ask whether any additional proof has been brought forward during the progress of the development of the belief in a spiritual existence which places it upon any firmer basis as an objective reality than that furnished by shadows and dreams. Clearly there has not, and this is not only admitted by the most eminent theologians of the present age, but these insist that it is both useless and wicked to seek for proofs, and that immortality must be accepted upon faith as a supernatural revelation to man.

Returning once more to the primitive belief in spiritual beings as the root of all religions, we will next inquire upon what basis of reality it rests when regarded as an objective deduction from the otherwise inexplicable phenomena of nature. Is the wind really an immaterial spirit? Are the sun, moon, and stars actual deities? Is the rainbow a goddess, or a bridge connecting earth and heaven, or was it placed in the heavens by deity as a covenant between him and man? Are meteors "excrements of dirty little star-gods"?* or is an eclipse the result of the defecation of the divine orb of day?† Does the plant grow, the tide ebb and flow, the rain descend, or the lightning flash, in obedience to spiritual powers above and outside of nature, having distinct personalities?

All these phenomena are now satisfactorily explained on strictly natural principles. Among peoples acquainted with science, all such supernatural beings have been dispensed with, and the belief in them is declared to be wholly false, and to have always been false. Yet, other spiritual beings are retained who are required to explain such residual phenomena as science has not yet grasped and subjected to law. Within the historic period, the territory once belonging to the gods, which has been contested and reclaimed by science, embraces the entire fields of astronomy, physics, chemistry, and geology. That of biology has now fairly passed out of theological supremacy, while those of moral and social phenomena are at the present time the battle-ground between science and religion. And now Mr. Spencer comes forward and proclaims that the latter must continue to retreat and surrender its empire, until the line is reached which sets absolute bounds to all possible human comprehension. This he is pleased to call a reconciliation! It certainly affords the only indication that the work of scientific invasion will ever find a limit; and any terms with a victorious enemy are better than annihilation (vol. i, p. 156 *).

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* Powell's address, above quoted.

† This, Major Powell informs me, is a myth of one of the Pacific Slope tribes in the physitheistic stage.

We saw that the subjective branch of religion was joined to error as its trunk, and that none but errors grew out of it or were ingrafted upon it. We now see that the objective branch, joined to the same trunk, has only been modified by gradually dwindling away in its ascent until, in the most logical minds, it has virtually disappeared. According to

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* It seems to be merely a coincidence that I should have employed the same simile that Mr. Gladstone employed for precisely the same purpose. I certainly never saw Mr. Gladstone's address nor the appendix to it, and the first intimation I had that any one else had ever seen the matter in the same light as it had presented itself to me was on July 28th (1882), or some months after the chapter containing the passage referred to had been stereotyped, when, on looking through the "Notes" to the "Study of Sociology" (the only part of the work that I had not read in the current periodicals) I met with it on page 423. The alternative interpretation which Mr. Spencer there points out would, I think, occur to very few, while the fact that the same simile could have been used independently by two writers, certainly strengthens confidence in its legitimacy. I need not, of course, add that, had I known of Mr. Gladstone's use of it, I would have omitted it, however independently it might have first presented itself to my mind.

Spencer, it must eventually be reduced to a mere metaphysical entity, which can certainly scarcely be recognized as a spiritual being.

Looking back now over the whole field, there remains no difficulty in recognizing the true position of religion as a social factor. It was simply a necessity of the condition of things that it should have come into existence as it has done. The placing of a rational being in a world such as this is constitutes the all-sufficient explanation of the development of a religious sentiment and religious institutions. The fact was pointed out with some care in the INTRODUCTION (vol. i, p. 45), that the phenomena of the universe present to the untaught mind a maze of incomprehensible data for speculation. The true nature of phenomena can only be known after ages of profound scientific thought and labor. Moreover, it is undeniable that the apparent is generally wholly different from the real, and, in a vast number of cases, it is precisely the reverse. Hence, the uninstructed rational faculty, instead of being employed in acquiring knowledge, is much of its time employed in manufacturing error. This mass of error, logically reached through the legitimate exercise of the developing reason of primordial man from all that nature presents to the experience of his faculties, constitutes, in every tribe and nation, the warp of its religion. Religion owes the possibility of its existence to the paradoxes of nature—to the chief of which attention has already been especially called (vol. i, p. 47)—to the incontrovertible fact that in the nature of things a rational being must, as a direct and inevitable consequence of his rationality, be led into the most vital errors, for which he must further be deceived into cherishing the most intense regard, until, by the slow march of solid knowledge and the ultimate adoption of the scientific method of laborious research and crucial tests, truth at last emerges and the clouds of error vanish.

This may be a hard lesson to learn, as it is a thankless one to inculcate, but to this complexion it must eventually come.

True, there is no room for optimism here, but we have already seen (*supra*, p. 46) that this is far from being an optimistic world. Those who are capable of wholly divesting themselves of these optimistic conceptions can see that it is just as antecedently probable that the world and man should be thus inharmoniously adjusted, as that they should be either more or less so. The only qualification absolutely required is that which the law of adaptation every-where requires, viz., that the want of correspondence shall not be so great as wholly to prevent the continuance of the organism. And here it may be properly remarked that it is not at all improbable that many incipient human races may have actually perished at the outset of their career in consequence of the adoption of errors of so vital a nature to their existence as to render it no longer possible. Of course, like other transition-forms, such races could leave no trace of their history, and therefore we can only reason out their possibility. To illustrate, however, how such might have been the case, we need only be reminded of the great prevalence of ophiolatry.* The zealous protection of venomous serpents causes them to multiply rapidly, and a condition may be easily imagined in which this might result in the actual destruction of the race persistently clinging to this caprice. India illustrates this in the fact that according to official returns over twenty-five thousand persons die annually of snake-bite, and the British officials meet with fanatical resistance in their attempts to rid the country of these dreadful pests.†

Still more dangerous foes might as easily become objects of worship and religious guardianship as snakes. Suppose a tribe inhabiting the tropics to become possessed of the belief that the tiger embodies the ghost of its much-revered ancestral chief, now a powerful god, and that therefore the tiger must be held sacred and never harmed in the least particular, under pain and dread of chastisement dire at the hands of said ancestral god. These men might slay the antelope and the buffalo, and thus reduce the amount of the tiger's natural prey, and give it cause to turn upon man as a substitute, but they might never injure a hair of the tiger itself. Under such a state of things, the tiger would soon come to regard man as an easy and defenseless prey, and would systematically hunt him and eventually exterminate him.

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* Tylor, "Primitive Culture" (London, 1871), vol. ii, pp. 7, 217. *Loc. cit.* (Boston, 1874), vol. i, p. 467; vol. ii, pp. 233, 234, 239.

† Spencer, "Principles of Sociology," vol. i, p. 36.

Erroneous beliefs of many other kinds might easily lead to the speedy or gradual extinction of races of men. Suppose a tribe to be seized, for any cause, with the idea that a divine command had been given to destroy all the female infants born after a certain day. Such a notion is not more absurd than many that have actually been entertained. The idea that all "heretics" must be destroyed would be as fatal to the intellectual life of society, could it be persistently carried out, as would the one proposed, to its physical life. For a "heretic" is simply a doubter of the truth of these false conceptions in the world, and he doubts because he possesses a superior reasoning power, and therefore represents a higher intellectual development. Yet this idea has extensively prevailed in the vanguard of humanity within the last five centuries, and thousands of the brightest lights of the world have been thus extinguished. Could it have been enforced, there could have been no such awakening as has taken place since that epoch—no era of science. Then there is the great eclipse of the learning of the ancients under this same religious influence, the closing of the schools throughout the Roman Empire, and the destruction of the works of literature and art, including the Alexandrian library. The history of savage customs is supplemented by that of cultured peoples in demonstrating that progress is by no means a stable condition, and has frequently been threatened with a total eclipse by the rise of some erroneous and fatal belief incompatible with its continuance.

To most minds the proposition that religion and science are fundamentally identical will present a paradox. Yet such is unquestionably the case. For, if science consists in a rational effort to explain phenomena, this is certainly the fundamental character of religion. Phenomena simply furnish the premises, and from these premises the active brain deduces its conclusions. These conclusions are crystallized into beliefs which are either true or untrue. If true, they furnish the data for the scientific elaboration of a cosmology. If untrue, they furnish the materials of a theology. While, however, religious beliefs have no demonstrable correspondence with the objective reality, it is not true that every error is necessarily in the nature of a religious belief. This must possess a special quality drawn from the peculiar nature of the conception of spiritual beings. It must be of a transcendental character, which is best designated by the term *supernatural*. No other errors than those which involve a belief in the supernatural possess the fundamental characteristics of religious error.

It is, therefore, upon this line that the two systems of explaining phenomena divide. The religious explanation is the supernatural, the scientific explanation is the natural. In all ages there have been some phenomena for which only a supernatural explanation had been offered, while in all nations at all advanced in culture many phenomena have been explained according to both methods by different minds. It has, however, been the uniform mark of intellectual progress that the supernatural should constantly give way to the natural method, and it has been on this advancing line that the warfare of religion and science has been constantly waged. The success of the latter must be ascribed to the application of what we have denominated the *indirect method*. The weapons of religion have been coercion and exhortation; those of science have been skill and strategy.

The developing intellect was at the outset placed face to face with two classes of phenomena, not indeed generically distinct, but whose extremes present vast differences in many respects. One class embraced the simple mechanical phenomena which lie upon the surface of nature, and which were fortunately of the greatest immediate practical importance to the physical life of the race. The other class embraced all the deeper cosmical phenomena, of vast importance to a developed race, but with which primitive man really need have had little to do.

The lower animals do not appear to have any thoughts whatever about this class of natural events, although they manifest considerable acquaintance with the other class which materially improves their ability to provide their own subsistence. But to the uninstructed intellect of primitive man no distinction in point of importance was recognized between these two classes of phenomena, and it immediately began to manufacture beliefs from both classes alike. The impossibility of comprehending those of the deeper and more recondite class led at once to the adoption of all the errors attendant upon the fundamentally erroneous supernatural explanation, and gave rise to religion as an inseparable element in the future culture and progress of the race. It was impossible that the primitive mind should make a correct solution of the problems presented by such phenomena as a reflected image, a shadow, an echo, a dream, a swoon, a fit, or death supervening upon a comatose state. These phenomena have only been correctly solved within the scientific period by a wide acquaintance with the laws of optics, of physiology, and of psychology as a product of brain-action; and there still remain many unexplained mysteries involved in the higher manifestations of some of them. Neither could the savage ever give correct explanations of the phenomena presented by external nature in general, such as storms, thunder and lightning, the rainbow, the aurora borealis, eclipses, comets, meteors, etc. Yet such phénomena, appearing to him to possess no regularity, but always taking him by surprise, must have formed the subject of intense interest and vigorous thought, portending, as they always seemed to him to do, some great danger. Speaking of comets, Humboldt wisely remarks, "It is an inherent attribute of the human mind to experience fear, and not hope or joy, at the aspect of that which is unexpected and extraordinary" * (vol. i, p. 684, note). It was this class of phenomena chiefly which at first formed the basis for the belief in objective spiritual beings—*i. e.*, of theology—belief wholly out of harmony with reality, and necessarily so in consequence of the incomprehensibleness of such deep-lying facts.

As intellect developed, thought became directed also to the more regular phenomena of external nature, such as the rising and setting of the sun, the successions of the seasons (in temperate latitudes), the tides of the sea, the changes of the moon, the migration of birds, etc. But, as the correct interpretation of these changes required the long and difficult development and perfection of the sciences of astronomy, physics, zoölogy, etc., it was as impossible for them to be correctly interpreted then as for the more irregular phenomena to be so interpreted at an earlier stage of development. The doubts which the absence of the sentiment of wonder at regular phenomena has raised with regard to the alleged intense contemplation of such phenomena by primitive man, may perhaps be partially reconciled with such facts as indicate that such intense contemplation must have taken place, if we admit, as we undoubtedly should, that this pensive state exists only in a very few, on the equally reasonable assumption that among the lowest savages, as among the most advanced races, there exist immense differences in both the quantity and the quality of the intellectual force in different individuals; and that, in the one case as in the other, it is the giants of mind who impose beliefs upon the backward masses.

However this may be, we find all these deeper phenomena explained by the savage, and always erroneously explained, upon the supernatural theory, which predicates the existence of spiritual beings and begets the religious sentiment.

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* "Cosmos," Otté's translation, vol. i, p. 97.

At the same time that this mass of error is accumulating in the impossible attempt to explain the underlying phenomena of nature, correct interpretations are being, little by little, given to certain of the superficial class, of which man has a pressing need to take immediate advantage. While there was more likelihood that a surface fact should be falsely interpreted than that a deep-lying fact should be correctly interpreted, yet many of the former received true explanations, and the laws determining them were turned to human advantage. The superior force of a blow dealt with a stick over a blow dealt with the naked fist was early seen by man, though no wild animal would probably take advantage of it, even if physically adapted to do so. The cleaving power of an edged tool, the *actio in distans* of a missile, the increased force given to a dart by the elasticity of a bow, the power of a concave vessel to contain liquids, the effect of an animal's skin to protect the body, and many other simple principles, yet all requiring some intellectual effort, generally considerably beyond the capacity of the lower animals, and therefore constituting an inchoate science and art, marked the infancy of true progress in the human race. The course of this movement, from this early beginning to the point attained in the present scientific nations of the world, has already been hastily sketched in the early part of the present chapter, and this recurrence to its initial stage has only been in consequence of the prime importance of pointing out the precise relations of science and religion down to their point of divergence at the dawn of intelligence.

If a satisfactory definition of religion has been given, and if its genesis has been correctly described in the foregoing remarks, nothing is left to be done but to answer the question, What is the position of religion thus defined, considered in connection with the progress of the human race?

Naturally it might be supposed that nothing good could come out of unmixed error, but, as a matter of fact, all races and peoples have ever regarded their religion as the most valuable of all their institutions. Yet this applies only to each people's own religion, and is never the estimate of one people of the religion of another. At the risk of repetition, let us bring forward an illustration of this most important qualification. If a convention of all the religions on the globe were to be called, each sect being represented by one delegate, and the question were to be voted upon in the case of each religion separately, Is this religion true? or, Is this religion beneficial to man? the result would inevitably be that only one affirmative vote would be cast in each case, and that would be the vote of the delegate of the particular religion upon which the vote was taken; and, if the action of this convention with regard to the feasibility of preserving or abolishing religions could be conclusive, it would be found that all the religions of the world would be overwhelmingly voted down and abolished, and this by the action of avowed religionists alone.

But it may well be asked whether this view of the case is a fair one, and whether the adherents of any creed are not better judges of its effects than those outside of its influence. It obviously becomes necessary, therefore, to look to the intrinsic merits of the question, and this from a disinterested stand-point outside of the influence of all religions. The founder of the greatest of religions has said that "the tree is known by its fruit," * and since his day no better criterion of merit has been proposed. In seeking to apply this test, it is hoped that the adherent of no particular religion will imagine that the illustrations are especially directed toward his own any more than toward any other faith, or with any other object than to portray in the most accurate manner possible the legitimate influence of the essential attributes of religion as such, the assumption being constantly borne in

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* "Revised New Testament," Matthew, xii, 33.

mind that in the preceding discussion we have arrived at a true definition of that in which religion fundamentally consists.

Notwithstanding the antecedent doubts with which the essentially erroneous character of the propositions of all religious belief surround the conception of beneficial results as flowing from such sources, we will first inquire whether, as a matter of fact, any such results are discoverable in the operations of this important human agency.

Aside from the recognition of Mr. Spencer's "soul of truth in things erroneous," which we cheerfully concede to religion in the sense in which he offers it, it is a legitimate inquiry whether there be not certain concrete and tangible ways in which religion conduces to the advantage of the individual and of society. The most natural method of arriving at the character of such advantageous effects is to hear the claims of religionists themselves. In considering these, it will, of course, be necessary to exclude that which they regard as most important, viz., the assumed benefits which result from the propitiation of spiritual beings, or deity; objective answers to special requests, or prayers; and especially the insuring of a beatific future state of existence, and the avoidance of a state of perpetual punishment. These beliefs, although admitted by their holders to be wholly devoid of physical proof, and to rest wholly on what they call "faith," are sufficient to account in themselves for the intense attachment of a people for its religion. And, inasmuch as the modes of propitiation differ in all religions, as do the names of the gods and the nature of the future state, this also explains in an entirely satisfactory manner the hostility of every religion toward every other. It also shows that it is not for their benefits to man in his present social and economic relations that religions are chiefly prized.

Among savages, religion is chiefly prized as a means of averting great calamities, conceived as constantly impending, from hostile spirits, ghosts, and demons,* and in nearly all religions the belief in malignant spiritual beings is as much a part of the creed as the belief in benignant ones. In the species of polytheistic hierarchy constituting Christianity, there is mingled besides its mysterious "Trinity," a well-marked dualism, doubtless in part derived from the great Persian dualism, while Mohammedanism is probably the nearest approach yet made to a pure monotheism.

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* Lubbock, "Origin of Civilization," p. 129.

No one will probably claim that the religions of savages, as a rule, involving as they do the perpetual apprehension of imaginary evils, and requiring countless heavy sacrifices, are of any material advantage to those races, while the evils of most barbarian creeds are so apparent that their merits, if they have any, are obscured to all but such as possess an intimate acquaintance with their detailed workings. The question of the benefits of religion to the temporal interests of man is, therefore, narrowed down to the most advanced systems.

The adherents of these maintain that religion is of the highest importance: 1, in lending a powerful sanction to virtue and morality; 2, in affording the highest consolation to all who believe in immortality; 3, in elevating character by the contemplation of the perfect ideal in the person of the deity and in those of the rest of the hierarchy of saints, or gods; and, 4, a certain subjective improvement which is supposed to follow from the habitual attitude of humiliation, confession, and prayer. There are probably other claims, but an exhaustive consideration of the subject is of course precluded by the scope of this work. A glance at each of these four alleged temporal benefits of religion will amply fulfill our present purpose.

Before proceeding to do this, it is proper to premise that the limiting of the question to the later derived religions really takes it out of the field legitimately assigned to this discussion, since the beneficial influences claimed do not any of them spring from attributes which are essential to religion, but from new ones which have been ingrafted upon it later in consequence of advancing intelligence. We are, therefore, really considering the question whether intelligence has not so far diluted pure religion, as it were, as to render it harmless or even beneficial, and in this case it is to intelligence that all the merits found should properly be credited.

Mr. Tylor very appositely says: "To some the statement may seem startling, yet the evidence seems to justify it, that the relation of morality to religion is one that only belongs in its rudiments, or not at all, to rudimentary civilization. The comparison of savage and civilized religions brings into view, by the side of deep-lying resemblance in their philosophy, a deep-lying contrast in their practical action on human life. So far as savage religion can stand as representing natural religion, the popular idea that the moral government of the universe is an essential tenet of natural religion simply falls to the ground. Savage animism is almost devoid of that ethical element which to the educated modern mind is the very mainspring of practical religion. Not, as I have said, that morality is absent from the life of the lower races. Without a code of morals, the very existence of the rudest tribes would be impossible; and, indeed, the moral standards of even savage races are to no small extent well defined and praiseworthy. But these ethical laws stand on their own ground of tradition and public opinion, comparatively independent of the animistic beliefs and rites which exist beside them. The lower animism is not immoral, it is un-moral." *

Again, with regard to immortality, the same author shows † that it does not belong to the lower forms of religion, but is a comparatively recent extension of the early idea of a future life. Neither was any such degree of perfection at first ascribed to spiritual beings and gods as to render the contemplation of their character in any degree elevating, as the Fiji gods "Woman-stealer," "Adulterer," "Brain-eater," and the Greek god "The Blood-stainer" (*Ares*), sufficiently attest; while prayer among primitive tribes is directed to the averting of the brutal blows which their gods are supposed able and likely to inflict without other cause than personal caprice.

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* "Primitive Culture" (London, 1871), vol. ii, p. 326.

† *Loc. cit.*, p. 19.

Without drawing these lines too closely, however, we will first look at the "moral sanction" of religion. In so far as men are actually deterred by religious beliefs from the commission of immoral acts which they would otherwise have committed, this must certainly be set down to the credit of such beliefs. That such is ever the case, however, is easier asserted or denied, than proved or disproved. There seems to be no means of testing such a question, no tangible clew by which it can be approached. As all civilized peoples possess some form of religion which is professed by the general mass, a comparison of the morals of different peoples settles nothing, unless it be the degree to which the moral sentiments have developed with or without the aid of religion. Different individuals in the same country profess different creeds, but a comparison of their morals either shows no fixed difference, or one which may be attributed to other causes.

The condition which, perhaps, approaches nearest to a legitimate guide to the settlement of this question, is that in which individuals of the same race and general characteristics are some of them religious and others not religious. Cases are abundant in the most advanced countries of individuals who disavow adherence to any creed or religion whatever. A comparison of the morals of such persons ought to show, on the theory under examination, a large deficiency. Such, however, certainly is not the case. Such persons are usually, though not always, well informed. The greater part of them are found among the devotees of the exact sciences.* Yet there is no more exemplary class of citizens in society than scientific men, whether believers or non-believers in any system of religion, and no distinction certainly can be drawn in point of morality between the religious and the non-religious scientific inquirer. On the other hand, though this may not logically prove any thing, it is a fact that criminals and the dangerous classes of society are generally believers in the prevailing faith of the country which they infest, and when brought to the scaffold they almost invariably confess the same, and expect absolution for their misdeeds.

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* Dr. Priestley states that he found all the philosophical persons to whom he was introduced at Paris, unbelievers in Christianity, and even professed atheists ("Popular Science Monthly," vol. v, p. 484).

Cases of conversion from the non-religious to the religious state of mind would be valuable evidence on this point were they sufficiently frequent to admit of a systematic examination of the moral character of the individuals before and after conversion; but such cases are very rare. What passes in Christian communities for "conversion" or "embracing religion," is a very different thing, and consists simply in an open avowal of a belief always tacitly but none the less firmly entertained. Such cases, therefore, which are quite common, really prove nothing; and it is universally found, as might have been expected *a priori*, that the alleged "change" has at least worked no appreciable alteration in character or conduct, so far as their moral effect is concerned. The opposite to the case of genuine conversion, first described, is much more frequent, viz., where believers become converted into non-believers. In fact, nearly all non-believers have once been believers (*supra*, p. 33).* Children always believe what is commonly inculcated at home, at school, in company with others, and wherever they may be. No belief is too absurd to be thus accepted. It is therefore only after independent reflection has been brought to bear upon a mass of previously accumulated evidence that the initial state of belief can be supplanted by a later state of doubt or non-belief. Yet in no such case can it be urged that the transition has been attended with any signs of moral degeneracy. If any difference is perceptible, it is more likely to be in the elevation of moral principle, as resting upon intrinsic rather than authoritative sanctions.

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* Cf. "The Journal of Speculative Philosophy," vol. xv (October, 1881), p. 394.

We are obliged, therefore, for want of any means of procuring evidence, to dismiss this claim as unestablished, though the unsatisfactory intimations above pointed out are, in so far as they are admitted, quite distinctly against its validity. It is a question upon which men are very prone to err. Just as they imagine they would commit crime but for certain governmental restraints (*supra*, p. 240), so they think they would do wrong but for religious restraints, when in fact they would do just the same as now if neither existed. The moral sanction is in reality first, both in time and in authority, and it has therefore been lashed to religion as a means of carrying the latter through, and not the reverse. It is moral sanction which gives authority to religious dogma, and not religious sanction which gives authority to moral principle. It is morality which has saved religion, and not religion which has saved morality. Here, as so often elsewhere pointed out, the apparent is the reverse of the real.

Next, we will consider the advantages claimed to accrue through the solace of a belief in immortality. Since happiness is the true object of life, every pleasure must be thrown into the scale for its full value, and, if this hope can be shown to afford a source of pleasure, it must not be neglected. Those who experience it, as well as most others, believe that this sentiment is a true pleasure, and surely every one must be allowed to be the judge of his own states of mind. Psychologically, however, this pleasurable sentiment belongs to the "faint series," as being, not objective, or real, but subjective and factitious. But there is a still deeper meaning involved in this. As previously shown (*supra*, p. 148), there is strictly no line of demarkation between pleasure and pain. Hope is a compound sentiment composed of expectation and desire. Mere expectation, in itself considered, is an indifferent state of mind. The desire belonging to hope is, therefore, the only component that need be here taken into account. But we have seen that desire constitutes the basis of pain, and is in fact all there is essential to pain, except the degree. When "hope deferred maketh the heart sick," the point has been reached when its painful character has become evident to consciousness. In view of this, our definition of progress would not embrace the supposed happiness derived from hope. True progress consists in the increase of actual enjoyment, not of imaginary enjoyment. Those whose only pleasure consists in hope, or anticipation, really have no enjoyment. They mistake a form of pain for a pleasure. The ascetic who eschews and despises all real pleasure, and imagines he is enjoying his victory over nature, is grossly deceived. He is really enjoying nothing. Such persons are to that extent insane, and we are certainly justified in refusing to accept the testimony of an insane person, even on the question of his own pleasure or pain. Bishop Butler's celebrated question, "Why might not large bodies of men, and whole communities, be seized with fits of insanity as well as individuals?" was by no means as chimerical as many think. But, if we grant, as a matter of words only, that this sentiment is a true enjoyment, it is, after all, only the anticipation of a real and natural pleasure which it is believed will be actually enjoyed in the future life; and this expected pleasure is not in the least different from that which is rejected in this life. The sensations that the anchoret pretends to despise are the ones he hopes to experience, only in an intensified form. He is simply dissatisfied because he can not get pleasure enough here, and believes that by a certain course of action he can get more hereafter. That they are the same must follow from the law that imagination can not transcend experience, except in the degree and in the mode of combination of effects already experienced.

With regard to the real influence of the doctrine of immortality upon civilization, both Comte and Tylor declare that it is popularly very much exaggerated.* The latter, however, indulges in the following reflections, which may, perhaps, be taken to embody as much truth as the human mind is capable of attaining to upon this difficult problem:

"The belief in future retribution has been indeed a powerful engine in shaping the life of nations. Powerful both for good and evil, it has been made the servant-of-all-work of many faiths. Priesthoods have used it unscrupulously for their professional ends, to gain wealth and power for their own caste, to stop intellectual and social progress beyond the barriers of their consecrated systems. On the banks of the river of death a band of priests has stood for ages to bar the passage against all poor souls who can not satisfy their demands for ceremonies and formulas and fees. This is the dark side of the picture. On the bright side, as we study the moral standards of the higher nations, and see how the hopes and fears of the life to come have been brought to enforce their teachings, it is plain that through most widely differing religions the doctrine of future judgment has been made to further goodness and check wickedness, according to the shifting rules by which men have divided right from wrong" (vol. i, p. 694).†

The alleged elevation of character which results from the contemplation of a deity conceived to be perfect is quite possible, notwithstanding the necessarily anthropomorphic character of all personal deities. These deities are the creatures of the most advanced minds of every people, and therefore always reflect the highest mental and moral attributes of every age. As such they become standards toward which the lower strata of society will gradually rise in proportion as they seek to assimilate their character to that of their deity. This is an influence difficult to measure, and may be passed over without further remark.

* "Philosophie Positive," vol. iv, pp. 476, 477, 482, 483; vol. v, pp. 123, 124, 297-300. "Primitive Culture" (Boston, 1874), vol. ii, pp. 104, 107.

† *Loc. cit.* (London, 1871), vol. ii, p. 97.

With regard, lastly, to the subjective efficacy of prayer, it may well be doubted whether the spirit which prayer produces is calculated to advance or elevate the race. It is inconsistent with that independence and originality of mind which accompany all progressive movements. Its effect in deterring the undertaking of such labors as have most advanced society will presently be considered, along with other anti-progressive tendencies of religion in general.

Upon the whole, therefore, we must conclude that there is no direction in which the belief in spiritual beings has advanced the temporal interests of mankind, and that therefore such belief, if it is of any advantage to the race, must be so in virtue of gains which it is to bring in a future state of existence—a field of discussion which, of course, lies outside of the province of this work and of all scientific investigation. It further appears that the real advantages which seem to flow from some of the modern forms of such belief are really due to the action of other and quite distinct agencies which have been so adroitly affiliated upon it as to create the impression that they have grown out of it. In the case of morality, we have seen how far this impression is from being true. The affiliation has been accomplished as a protection to systems of belief which would otherwise have lost their hold upon mankind. In the lower stages of development, when intelligence was at its minimum and credulity at its maximum, religion, however irrational, could and did stand alone; but as intelligence increased and credulity diminished, it began to feel the need of a support, which the priesthood, always the most astute portion of the community, but whose interest in the maintenance of the *status quo* greatly overruled any promptings of their better judgment to act otherwise, succeeded in constructing by attaching ethical principles and doctrines to the notion of a future state of existence, and elaborating a system of future rewards and punishments. Instead, therefore, of considering what morality owes to religion, it may yet become a question how far natural morality has been lowered by such an association with supernatural belief.

In like manner, instead of considering the elevating effect of the contemplation of the attributes of a personal anthropomorphic deity, it is a fair speculation how much higher the human mind would have risen in its efforts to comprehend the natural universe, had no such explanation as a spiritual being or a personal god ever suggested itself.

Having thus considered the alleged progressive influences of religion, our next task is to glance at the opposite class, the anti-progressive influences.

Whatever may be the benefits which supernatural beliefs have conferred and are to confer upon man in a future state of existence, they have not only conferred none upon him in the present state, but have demonstrably impeded his upward course throughout his entire career. The product of his reason, as being the rational deductions of the normal mind, but drawn from premises necessarily false in consequence of the physical impossibility of his correctly interpreting most of the striking phenomena that nature thrusts upon his attention, such beliefs constitute a distinctly human characteristic, never occurring, so far as observation can determine, even in their crudest forms, among the most developed and most sagacious of the lower animals.* From this point of view it is extremely interesting to note to what extent the rational faculty of man, instead of serving him as a compass to point out his safe course, has, in fact, guided his hapless bark upon shoals and rocks, and into storms and whirlpools. It would be amusing, were it not so melancholy, to observe how many unwise, absurd, and suicidal † acts reason itself leads man to perform, which no other animal upon the globe could be induced to perform.

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* Darwin, "Descent of Man," vol. i, p. 129.

† Suicide itself, which no animal intentionally commits, is the type of the whole of this class of actions.

If we seek for a single term which shall most completely embody this idea and represent this class of human actions, we shall find it in the word *superstition*. But the common acceptation of this word requires to be somewhat expanded in order to make it cover the whole ground. The notion that "superstition is anything that I do not believe," must give way to the definition, "belief in the supernatural," to which the term adds the notion of consequent foolish or injurious acts. Although all superstitions may not be obviously connected with the belief in spiritual beings, yet this is so nearly the universal rule that it may be regarded as without exception. It must also be remembered that, just as each religion claims that it is the only true one, so it also declares every other a mere superstition. This applies even to slightly varying sects, as the Protestant and Catholic sects of Christianity; for every one knows how, shortly after the Reformation had gained control of England, the landed estates of the Roman Church were expropriated by acts of Parliament, which recited that they were held "for superstitious uses."

A superstitious act is one that no animal ever commits. The acts of animals are intensely practical, and are equally free from affectation and from superstition. They are never guilty of any such nonsense as men often reason themselves into. Superstition is therefore a strictly human development, and really constitutes one of the modes that reason had taught mankind for securing future benefits or averting future evils, developing side by side with that rational foresight which has been the chief aid to human progress; the difference between superstition and scientific prevision being, that the one was constructed of false, and the other of true conceptions.

It would of course be impossible, in the brief space that is left us, to pass in review the vast mass of superstitions of mankind, or to attempt any systematic enumeration of the principal classes into which they naturally fall. It must suffice to mention a few typical cases, each of which will doubtless suggest to the reader a multitude of kindred ones, and serve to keep in his mind the general direction which the present discussion aims to pursue.

Probably the greater part of all superstitions belong to what may be called the indifferent class, *i. e.*, the class whose influence upon the welfare and progress of the race can not be said to be either injurious or beneficial, at least directly; although such beliefs can scarcely be conceived to exist without exerting a lowering influence of a general character upon those who entertain them. Such indifferent superstitions are found in a thousand absurd customs, rites, and ceremonies among the uncivilized races of man. These harmless customs pass by insensible gradations into more and more painful and injurious ones. Thus we find that among the Charruas, when the head of the family died, "the daughters, widow, and married sisters were obliged to have each one joint from the finger cut off; and this was repeated for every relation of the like character who died: the primary amputation being from the little finger"; and the Mandans express grief on the death of a relative by losing "two joints of the little fingers, or sometimes the other fingers."* Such sanguinary customs are usually connected with the death of some one whose spirit requires these sacrifices. In certain tribes brutal orgies take place on the occasion of a death, the descriptions of which are frightful to read. Mr. Darwin describes one that he saw some of the features of, when in New Zealand, and although less shocking than many others related, it is, from its greater authenticity, a valuable example. He says: "The daughter of a chief, who was still a heathen, had died there five days before. . . . The relatives of the family had torn the flesh of their arms, bodies, and faces, so that they were covered with clotted blood; and the old women looked most filthy, disgusting objects. On the following day some of the officers visited this place and found the women still howling and cutting themselves."[*] Under similar circumstances it is related that "among the Haidahs of the Pacific States, the Taamish, or inspired medicine-man, 'springs on the first person he meets, bites out and swallows one or more mouthfuls of the man's living flesh wherever he can fix his teeth, then rushes to another and another.'"[†] Such brutalities, however, are among the least serious of the sacrifices which savages make on account of the spirits of the departed. As Mr. Tylor pointedly remarks,[‡] "Men do not stop short at the persuasion that death releases the soul to a free and active existence, but they quite logically proceed to assist nature by slaying men in order to liberate their souls for ghostly uses." The sacrifice of slaves, subordinate officers, and wives, on the death of a chief or king, is a custom that prevails in a shocking manner among many now living tribes of savages. "Ximenez tells us concerning the Indians of Vera Paz, that 'when a lord was dying, they immediately killed as many slaves as he had, that they might precede him and prepare the house for their master.'"[#] "By the Mexicans 'the number of victims was proportioned to the grandeur of the funeral, and amounted sometimes, as several historians affirm, to two hundred'; and in Peru, when an Ynca died, 'his attendants and favorite concubines, amounting sometimes, it is said, to a thousand, were immolated on his tomb.' The intensity of the faith prompting such customs we shall the better conceive on finding proof that the victims are often willing, and occasionally anxious, to die. Among the Guaranis, in old times, some faithful followers 'sacrificed themselves at the grave of a chief.' Garcilasso says that a dead Ynca's wives 'volunteered to be killed, and their number was often such that the officers were obliged to interfere, saying that enough had gone at present.' . . . In Africa it is the same. Among the Yorubans, at the funeral of a great man, not only are slaves slain, but 'many of his friends swallow poison,' and are entombed with him. Formerly in Congo, 'when the king was buried, a dozen young maids leaped into the grave . . . and were buried alive to serve him in the other world. These maids were then so eager for this service to their deceased prince that, in striving who should be first, they killed one another.' And in Dahomey, 'immediately the king dies, his wives begin to destroy all his furniture and things of value, as well as their own; and to murder one another. On one occasion two hundred and eighty-five of the women were thus killed before the new king could stop it.'" *

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* Spencer's "Ceremonial Institutions," p. 56, § 358.

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[*] "Journal of Researches," etc., p. 429.

[†] Spencer's "Principles of Sociology," vol. i, p. 289.

[‡] "Primitive Culture" (London, 1871), vol. i, p. 413.

[#] "Principles of Sociology," vol. i, p. 205.

"Some Khonds believe the god eats the human being killed for him; the Tahitians thought their gods fed on the spirits of the dead, and therefore provided them with such spirits by frequent slaughterings. . . . The Tongans made offerings of children to their gods, who were deified chiefs. . . . Among the Mexicans additional slaves were slain on the fifth day after the burial, on the twentieth, on the fortieth, on the sixtieth, and on the eightieth days. . . . Human sacrifices thus repeated to propitiate the ghosts of the dead, evidently pass without break into the periodic human sacrifices that have commonly been elements of primitive religions." † "Of such rites in the Pacific islands, the most hideously purposeful accounts reach us from the Feejee group. Till lately, a main part of the ceremony of a great man's funeral was the strangling of wives, friends, and slaves, for the distinct purpose of attending him into the world of spirits. Ordinarily the first victim was the wife of the deceased, and more than one if he had several, and their corpses, oiled as for a feast, clothed with new fringed girdles, with heads dressed and ornamented, and vermilion and turmeric powder spread on their faces and bosoms, were laid by the side of the dead warrior. Associates and inferior attendants

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* *Loc. cit.*

† *Loc. cit.*, p. 288.

were likewise slain, and these bodies were spoken of as 'grass for bedding the grave.' When Ra Mbithi, the pride of Somosomo, was lost at sea, seventeen of his wives were killed, and after the news of the massacre of the Namena people, in 1839, eighty women were strangled to accompany the spirits of their murdered husbands. . . . The Caribs would slay on the dead master's grave any of his slaves they could lay hands on. Among the native peoples risen to considerably high grades of social and political life, these practices were not suppressed but exaggerated, in the ghastly sacrifices of warriors, slaves, and wives, who departed to continue their duteous offices at the funeral of the chief or monarch in Central America and Mexico, in Bogota and Peru." *

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* "Primitive Culture" (London, 1871), vol. i, pp. 415, 416.

Lest it should be supposed that the era of sacrifices is over, and all concern about them uncalled for, I append the following telegram from the "New York Tribune," of April 13, 1880, announcing an event which occurred six months after this chapter was written:

"THE GREAT BURMAH MASSACRE.

"LONDON, *April 12th.*—The seven hundred men, boys, girls, priests, and foreigners sacrificed at Mandalay for the restoration of the king's health, were buried alive—not 'burned,' as previously stated—under the towers of the city walls. The deed was done to appease the evil spirits."

Commenting on this occurrence, the "United States Economist," April 17, 1880, says: "The sacrifice of seven hundred persons, including men, boys, women, girls, priests, and foreigners, at Mandalay, for the restoration of the king Thebaw's health, is an outrage and a blot on the civilization of the nineteenth century. Had such a wholesale massacre occurred in the most remote and inaccessible regions of Africa, there might be an excuse alleged for non-interference on the part of civilized governments, but no such reason can be given in this instance. Burmah is one of the important kingdoms of the far East. Mandalay, the capital and residence of the monster king, is an accessible sea-port, in which reside consuls representing European and Asiatic powers. The intention of this pagan to offer such a horrible rite to appease his gods was known to the consuls, and fear and consternation had seized upon his subjects and they were fleeing for their lives.

"The governments who heretofore seemed to exercise a sort of protectorate over these smaller kingdoms made no attempts to stay this wholesale slaughter, and the king was permitted to bury alive seven hundred victims under the towers of the city walls. This fearful news excites a shudder through all Chris-

The waste and systematic destruction of property at funerals, though less shocking than the destruction of life, has probably, in fact, been even a more terrible evil to mankind. Among these degraded savages, a few wretched lives such as are thus sacrificed count for little, and slightly tend to diminish population, always too great for the means of subsistence. The thing most to be desired is a comfortable living for those who survive, and whatever destroys property strikes a direct blow at the happiness of the living (vol. i, p. 493). Moreover, the sanguinary practices above described, though common to many peoples, are believed to be limited to cases of the death of chiefs, kings, and high dignitaries, and to prevail only in a mild form, if at all, on occasions of death among common men. Not so the destruction of property. Any one who has any property is high enough to have it all destroyed at his death, and this may in some cases have actually proved fatal to the existence of certain tribes.

"With the dead Patagonians are left 'all their property'; with the Nagas, 'all the movable property'; with the Guiana people, 'the chief treasures which they possessed in life.' . . . The body of the late Queen of Madagascar 'was swathed in five hundred silk lambas, in the folds of which twenty gold watches, one hundred gold chains, rings, brooches, bracelets, and other jewelry, together with five hundred gold coins,

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tendom, and with this thrill of horror there will come the inquiry, Could such an holocaust have been averted? If it could, a fearful responsibility rests somewhere. The governments who through their consuls had knowledge of the designs of the king should have interfered to save the lives of his subjects, and he should have been given to understand that the powers of the world would hold him responsible for such a murderous crime.

"In this case one nation may say to another, in explanation of non-interference, 'Am I my brother's keeper?' but this statement will not lessen the responsibility. A fearful massacre of human life, in defiance of God's law as well as civilized sanction, has been permitted to take place, and the governments who are represented by consulates in Burmah are in a measure responsible for the dark tragedy. Such terrible scenes are too gross an outrage to disgrace this period of the world's history, and an end should at once be put to the reign of such an infamous pagan."

were rolled.' By the Mishmis, all the things 'necessary for a person whilst living are placed in a house built over the grave.' And Burton says that, in Old Calabar, a house is built on the beach to contain the deceased's property, 'together with a bed, that the ghost may not sleep upon the floor.' To such an extent is this provision for the future life of the deceased carried, as, in many cases, to entail great evil on the survivors. Concerning some Gold Coast tribes, Beacham says, 'A funeral is usually absolute ruin to a poor family.' Low states that the Dyaks, besides the deceased's property, 'bury with him sometimes large sums of money and other valuables; so that a father, who has been unfortunate in the death of many of his family, is frequently reduced to poverty.' And among some extinct societies of America, nothing but the deceased's land, which they are unable to put into his grave, remained for his widow and children."* "On the death of a Toda, 'his entire herd' of oxen was sacrificed; the implication being that his widow and children had to suffer great want. When, of the Chippewayans, we are told that 'no article is spared by these unhappy men when a near relative dies'—when we learn that among the Bagos, a chief's widows burn all their stores of food at his funeral; we can not but infer lack of food as a result. And so we find it. Bancroft tells us that 'the Indians of the Rocky Mountains burn with the deceased all his effects, and even those of his nearest relatives, so that it not unfrequently happens that a family is reduced to absolute starvation'; and, of the Bagos above named, Caillié says, 'The family of the deceased, who are ruined by this act of superstition [burning his property], are supported through the next harvest by the inhabitants of the village.'"† In the case of monarchs, the sacrifice of property is on a scale proportionate to their rank. "Here are the details of an account published in 1849, of the funeral of the late king of Cochin-China: 'When the corpse of Thien Tri was deposited in the coffin, there were also deposited in it many things for the use of the deceased in the other world, such as his crown, turbans, clothes of all descriptions, gold, silver, and other precious articles, rice and other provisions.' Meals were set out near the coffin, and there was a framed piece of damask with woolen characters, the abode of one of the souls of the defunct. In the tomb, an inclosed edifice of stone, the childless wives of the deceased were to be perpetually shut up to guard the sepulchre, 'and prepare daily the food and other things of which they think the deceased has need in the other life.' At the time of the deposit of the coffin in a cavern behind the tomb building, there were burnt three great piles of boats, stages, and every thing used in the funeral, 'and, moreover, of all the objects which had been in use by the king during his life-time, of chessmen, musical instruments, fans, boxes, parasols, mats, fillets, carriages, &c., &c., and likewise a horse and an elephant of wood and pasteboard. Some months after the funeral, at two different times, there were constructed, in a forest near a pagoda, two magnificent palaces of wood, with rich furnishings, in all things similar to the palace which the defunct monarch had inhabited. Each palace was composed of twenty rooms, and the most scrupulous attention was given in order that nothing might be awanting necessary for a palace, and these palaces were burned with great pomp, and it is thus that immense riches have been given to the flames from the foolish belief that it would serve the dead in the other world.' "*

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* "Principles of Sociology," vol. i, pp. 202, 203.

† *Loc. cit.*, p. 285.

To these modes of destroying property through superstitious beliefs, should be added the immense treasures that are expended in the erection of costly tombs and sepulchres for dead chiefs and kings. "That which early Spanish travelers tell us about the Peruvians, ancient Greek travelers tell us about the Egyptians. Cieza expresses his astonishment to see how little the Collas cared for having large and hand-

* "Primitive Culture" (London, 1871), vol. i, pp. 441, 442.

some houses for the living while they bestowed so much care on the tombs where the dead were interred; and similarly Diodorus, giving a reason for the meanness of the Egyptians' dwellings, as contrasted with the splendor of their tombs, says, 'They call the houses of the living inns, because they stay in them but a little while; but the sepulchres of the dead they call everlasting habitations.'"* The pyramids of Egypt are generally supposed to have been erected as gigantic tombs for deceased kings; and Herodotus† gives an account of the enormous cost of material, labor, and time that their construction entailed upon the people of Egypt. The temple, as Mr. Spencer shows, has grown out of the tomb, and therefore all the costly mosques, cathedrals, and churches of later ages, whatever opinions may be held as to their value to the race, must be traced to this early superstition.

In considering solely the effect which superstitions exert upon the progress of the human race, certain of the less obvious and striking practices and tendencies come, on closer examination, to outweigh other more manifest and at first apparently more injurious ones. Just as the destruction of property has been shown to be a really worse evil than the destruction of life, so the more gentle but persistent opposition which all forms of religion have offered to the progress of science, even in its infantile, unsystematic, or empirical state, has really contributed more to retard the progress of civilization than have all these bloody sacrifices of life and wanton destructions of wealth.

Let us consider this influence under two general heads, its negative and its positive aspects.

The only manner in which the temporal condition of the human race has undergone any amelioration has been by its active and successful efforts to modify the environment. In doing this the physical forces and substances, the material objects and their qualities, whether animate or inanimate, have alone been operated upon. Progress, in fact, consists in the directing of natural forces, otherwise doing no good or doing harm, into channels of human advantage. It follows that no efforts to control supernatural influences can by any possibility contribute to this result. Even granting the reality of the alleged supernatural beings, they are none the less wholly outside the domain of all material things with which alone social amelioration has to do. Yet while from the nature of the case such efforts can bring no good to man in this life, it is clear that they may result in his injury in two distinct ways. By whatever amount the energies of man are expended in efforts to influence supernatural beings, by so much will they be withdrawn from the legitimate work of ameliorating his temporal condition. This in the abstract constitutes what we shall call the negative opposition which the belief in spiritual beings makes to human progress. The positive opposition which religion offers to true, or scientific, progress is well known, and consists in open hostility to the advancement of knowledge which threatens to explain away the necessity for supernatural powers and thus to sap the foundations of religion itself. There is, however, a tendency on the part of the negative form of opposition to pass into the positive, as will be seen from a few illustrations which will now be given under each head.

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* "Principles of Sociology," vol. i, p. 275.

† II, pp. 124–128.

Perhaps the purest and at the same time the mildest form of negative opposition may be seen in the existence of the priesthoods, which are the necessary concomitants of all religions at all developed. If there were no other effect, the withdrawal of so large a proportion of the people from the productive arts, and the necessity for their support by the rest of the community, constitutes, in the least extreme cases, a heavy tax upon the mental and muscular forces of society. The fact upon which M. Comte lays so much stress, that these priesthoods, from the very leisure which their position affords, have in many cases come to lead the intellectual movement of their age and country, though probably fully offset by the abuse of power which this inequality of intelligence has enabled them to exercise, is not really applicable here, since in so far as they are cultivating letters, or any of the great progressive arts, they are not acting in their sacerdotal but in a scientific capacity, and it is not individuals but actions which we must seek to classify. Still, as is well known, the tendency has ever been to establish a caste of purely "spiritual" advisers, not in the sense in which Comte used that word, viz., *intellectual*, but whose sole duty it should be to look after the relations of mankind to assumed spiritual beings. As such, so far as this life is concerned, their energies are wholly wasted, as are also those of the laity expended in purely devotional or propitiatory exercises.

This withdrawal of human energy and attention from the things of this life and fixing them upon supramundane and supernatural conceptions is attended with secondary consequences which are far more important than the actual loss thus occasioned to temporal interests. It brings about a complete divorce of man from nature.

As it is only by operating directly upon the material universe that any beneficial changes can ever be wrought in man's social condition, it is apparent how great must be the injury which such a divorce must occasion. Erasmus, "the brains of the Reformation," truly said: "Though our mortal eyes have failed to penetrate the depths of heaven, we have succeeded in losing sight of our own earth." In thus losing sight of earth the men of that and preceding centuries had shut out all hope of further material advancement, and had, in the most important elements of social existence, actually been degenerating for more than a thousand years. During this long period of the world's recent history, religion held supreme sway over the highest types of humanity, and, with a great past behind it, buried and forgotten, all social and intellectual progress was in a state of complete suspension.*

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* As showing the general stagnation of the world, with respect to the progress of science, from the third to the fifteenth centuries, the following passage from the annual address of Professor O. C. Marsh, as retiring President of the

It is safe to affirm that, could such a state of things continue, rapid degeneracy would eventually set in, and civilized races would pass back into barbarism. We may, therefore, contemplate this as one of the possible ways in which races may have brought about their own extinction at an early period in their career.

One of the earliest results of this state of mind after it has become chronic in society is a complete indifference to natural phenomena when presented. Engrossed in thoughts of another world, and of beings beyond the range of bodily experience, men soon come to manifest no concern for any of the things of this mortal existence. Under such a sentiment temporal affairs must languish and material progress cease. Moreover, this state of indifference further develops into one of contempt and scorn for all earthly surroundings. Asceticism is the result. Life is despised and death courted. The Getæ weep at births and laugh at funerals. Abdallah of the Sea and the dwellers in the sea feast and sing when one of their number dies; the Buddhist saint eats "his food with loathing from the alms-bowl that he carries as though it held medicine, wrapping himself in grave-clothes from the cemetery, or putting on his disfigured robe as though it were a bandage to cover a sore, whose looking forward is to death for deliverance from the misery of life, whose dreamiest hope is that after an inconceivable series of successive existences he may find in utter dissolution and not-being a refuge even

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American Association for the Advancement of Science, at Saratoga, in 1879, relative to paleontology, which probably fairly represents all the sciences that had then been at all pursued, will be appropriate. After mentioning the speculations of Tertullian (A. D. 160) about the remains of marine animals found on mountains far from the sea, he says: "During the next thirteen or fourteen centuries, fossil remains of animals and plants seem to have attracted so little attention that few references are made to them by writers of this period. During these ages of darkness, all departments of knowledge suffered alike, and feeble repetitions of ideas derived from the ancients seem to have been about the only contributions of that period to natural science." ("Proceedings," vol. xxviii, p. 4.)

from heaven."[*] "The monastic recluse closes every aperture of his narrow cell on his return from midnight prayers, for fear that the nightingale's song might intrude upon his devotions, or the morning wind visit him with the fragrance and the greeting of the hill forests, and divert his mind to earthly things from things spiritual."[†] The monks of the order of Feüillans "knelt on the floor during their refections, and some of them were in the habit of drinking out of skulls. They abstained from eggs, fish, butter, and even salt, and confined themselves to pottage made of herbs boiled in water, and bread so coarse and black that beasts refused to eat of it." As a result of this austerity fourteen monks died in a single week.[‡] Pascal refused to look at a landscape, and wasted the latter part of his brilliant life amid the asperities of Port Royal.[#] Racine, the great French poet and dramatist, robbed the world of his talents at an early age by burying them in the same grave.[‖]

From asceticism it is but a short and natural step to self-torture, and this practice has prevailed extensively among many religious sects, especially the more advanced. Indian fakirs "swing for hours from hooks drawn through the muscles of their backs, or let their nails grow through the palms of their clinched hands, or roll over and over hundreds of miles to visit a shrine." Bellarmine patiently let the fleas bite him, saying, "We shall have heaven to reward us for our sufferings, but these poor creatures have nothing but the enjoyment of the present life."[A] Speaking of the

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[*] "Primitive Culture" (London, 1871), vol. ii, pp. 96, 97.

[†] Quoted from Ulric Hutten by Dr. Felix L. Oswald, "Popular Science Monthly," vol. xii, p. 45.

[‡] "Works of Francis Bacon" (New York, 1869), vol. i, p. 532, note.

[#] He is said to have given himself entirely up to "prayer and practices of mortification, among which practices may be mentioned that of wearing an iron girdle, studded with sharp points, which he forced into his flesh whenever he felt himself assailed by sinful thoughts." ("Chambers's Encyclopædia," 1865, article Pascal.)

[‖] Roche, "Histoire des principaux écrivains Français," tome ii, p. 27.

[A] "Primitive Culture" (London, 1871), vol. i, p. 425, foot-note.

Flagellants, Dr. Carpenter says: "These Flagellants went about in bands with banners, and even music, carrying scourges; and then at a given signal every one would strip off the upper garment (men, women, and children joined these bands), and proceed to flog themselves very severely indeed, or to flog each other; . . . mothers actually scourged their new-born infants before they were baptized, believing that in so doing they were making an offering acceptable to God."[*] It is reported upon reliable authority that the practice of scourging still prevailed a few years ago at Rome.[†] In a few countries this self-chastisement is carried to a fatal result, as in India, where until recently the practice of sacrificing themselves under the car of Juggernaut still prevailed, along with that of casting infants into the Ganges. But sufficient has already been said to illustrate what is meant by the negative opposition of religion to science, the facts of which are familiar.

The simplest form of direct opposition which the religious sentiment offers to the extension of knowledge, and that which constitutes the transition from the negative to the positive form, consists in the tacit disinclination and repugnance which it logically engenders to any attempt having in view the alteration of the state of things which naturally exists. This influence is described with characteristic clearness and force by Comte in the following passage of the "Philosophie Positive"[‡]: "Suivant la logique, barbare mais rigoureuse, des peuples arriérés, toute intervention active de l'homme pour améliorer à son profit l'économie générale de la nature, doit certainement constituer une sorte d'injurieux attentat au gouvernement providentiel. Il n'est pas douteux, en effet, qu'une prépondérance trop absolue de l'esprit religieux tend nécessairement, en elle même, à engourdir

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[*] Lecture on "Epidemic Delusions," delivered at Manchester, 1872.

[†] See a little work by the Rev. Dr. C. M. Butler, entitled "Inner Rome," p. 247.

[‡] Vol. iv, p. 517. Cf. also, vol. vi, p. 142.

l'essor industriel de l'humanité, par le sentiment exagéré d'un stupide optimisme, comme on peut le vérifier en tant d'occasions décisives." It must be constantly borne in mind that all progress consists in the arbitrary alteration, by human efforts and devices, of the normal course of nature, so that civilization is wholly an artificial product. But if the natural course of things is the result of the voluntary action of spiritual beings, nothing could be more rational, on this assumption, than the conclusion that every artificial product is the result of successful attempts on the part of man to thwart the will of the gods. This sentiment, as Comte admits, even while striving to defend the priesthood, really has made itself felt, and this in proportion to the intensity of religious belief, on the one hand, and of the logical powers of the mind, on the other. Reason and credulity, usually pitted one against the other, are here found in close alliance on the side of error against civilization. Whatever progress was, in fact, made in the earlier stages when belief was most intense, was due to the feebleness of the reason, which failed to deduce this most obvious conclusion; while the progress made at later stages, when reason had been strengthened, was due to a decline in the intensity of the belief, which questioned the premises upon which the reasoning proceeds. The stage in which progress is most completely arrested is that which precedes the era of doubt, but succeeds the full development of the rational faculty. Such a stage may be considered as having actually existed after the decline of the intellectual epoch of Greek and Roman philosophy and before the epoch of skepticism inaugurated by the Protestant Reformation and completed by the adoption of the scientific method. It was during this period that the legitimate influence of an honest and immovable belief in the fundamental concepts of theology and religion, coupled with a trained and inherited mastery of the theory and use of logic and reason, succeeded most completely in barring the way of the ameliorative arts.

Naturally enough, too, we find that this open opposition made itself most distinctly manifest near the beginning and near the close of this period. It must first subdue and overwhelm the lights of antiquity, which was not accomplished without a struggle; and, when skepticism reared its head twelve centuries later, there resulted the second grand struggle. During the long interval which separated these two struggles so quiet lay the smothered form of progress that scarcely a murmur from it is heard through history. Religion once installed in full power throughout Europe, Western Asia, and Northern Africa, its systematic warfare upon the progress of the past began. The schools of philosophy, art, and science were closed; the teachers of all branches were forbidden to impart their knowledge. The works of art were broken up as pagan idols, or transformed into Christian symbols. Mohammedanism came to supplement the work of Christianity. The Alexandrian University (for such it really was) was inhibited; its teachers were scattered or put to death; its astronomical and other scientific apparatus was destroyed; its library, containing seven hundred thousand volumes of accumulated literature, was sacked and burned. "A mob of fanatic Christians, led on by the Archbishop Theophilus, stormed and destroyed the temple (of Jupiter Serapis, called the Serapeion, where most of the books were kept), together, it is most likely, with the greater part of its literary treasures, in 391 A. D. It was at this time that the destruction of the library was begun, and not at the taking of Alexandria by the Arabians under the Caliph Omar, in 642 A. D."* It was by the systematic carrying out of such measures as these that the last feeble flicker of the ancient light was finally extinguished, and the complete supremacy of the religious over the scientific agencies of society was established.

But, though the flame was quenched, the embers still smoldered, and when at last they could be smothered no longer, and burst out afresh in the middle of the fifteenth century, the irrepressible conflict was renewed, this time with far greater warmth than ever before. The story of the Protestant Reformation, of the Holy Inquisition, of the rise and fall of witchcraft, of the persecution of Copernicus and Galileo, of the martyrdom of Bruno and Servetus, and of the bitter and systematic warfare upon science and material civilization, is already a trite theme, and its true character doubtless fails to receive due appreciation from the frequency with which it is presented to the mind. It would, therefore, be a wholly superfluous task to attempt here to pass this chapter of human history in review. Having called it up and fixed it in its appropriate niche in the general scheme, it will be sufficient to refer the reader for further details to the history of Europe during those periods.

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* "Chambers's Encyclopædia," article "Alexandrian Library." See, also, article "Omar."

In the foregoing pages the reader will doubtless have already seen ample justification for the introduction and somewhat extended treatment of the religious influence in society. It is not alone because the popular belief respecting its relations to human progress is wholly erroneous that this became essential. There are practical reasons, arising out of the general system of thought that it is here sought to develop, which made this course a logical necessity. The natural and the supernatural agencies have one and the same origin, seek one and the same object, and follow distinct but co-ordinate lines. To omit one of these would be to present a one-sided and unbalanced system, easily overthrown.

All voluntary human efforts are necessarily directed to the modification of the existing condition of things in the interest of man. In the primordial groping of the human reason, two widely different methods of attaining this end were, as we have shown, adopted and carried out, neither of which has yet been completely renounced by any whole race or nation. One of these methods aimed to control for man's benefit the simpler and more superficial phenomena which, from their simplicity and superficiality, were early seen to be governed by invariable laws. The other aimed to control, for the same purpose, the deeper and more occult phenomena which, from their depth and obscurity, were believed to be produced by the voluntary action of mysterious spiritual beings, having minds and wills like those of men. The superstructure which was built upon the first of these foundations was that of science and inventive art, constituting the material civilization of the world. The superstructure which was built upon the second of these foundations was the religious edifice. The first, being founded upon a belief in harmony with the real state of things in the universe, resulted in the intellectual elevation and physical improvement of mankind; the second, being founded on a belief out of harmony with the real state of things in the universe, exerted no elevating or ameliorating influence upon the earthly life of man, but tended in itself to leave him as he was in this respect. The "conflict," however, arose from the simple and necessary circumstance that, with the advancement of intelligence brought about through the operation of the first method, the deeper and more obscure phenomena already claimed by religion were one after another recognized as coming within the dominion of fixed laws and claimed also by science. Religion had nothing to gain and every thing to lose; and it has, in fact, been constantly losing from the first, and must continue to lose to the last. It has thus been a true "warfare of science,"[*] science having all along been on the offensive. Its march, though ultimately irresistible, was nevertheless perpetually resisted by the agencies of supernatural belief, resulting in a continuous and protracted "conflict."

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[*] A certain class of persons have sought to demonstrate by various methods that there exists no real conflict between religion and science, but the attempt has always proceeded from the heart rather than from the head. It not only ignores the multiplied facts of history and ethnography, but is negatived, as we have seen, by the fundamental character of human society and progress. It is a more or less clear perception of this truth which has emboldened certain modern authors to come forward with important works on this subject, and which prompted Professor Charles S. Peirce to remark that "those scientific men who

CONCLUSION.

The real progress of the world has not, as we have seen, been along one direct and continuous line. While treating of the mode of development in biology, in Chapter VI (vol. i, p. 425), we saw that it consisted in an irregular and apparently fortuitous succession of alternating advances and halts, none of the former ever proceeding in precisely the same general direction as the one preceding it, and the latter persisting until there had been developed some new principle which should serve as a new point of departure for the succeeding advance. This process was compared to the slow, labored, and irregular approach of a besieging army toward a garrisoned fortress, the advances being usually executed rapidly and by indirect or flank movements. If we look back over the history of human progress, we shall see that it has been accomplished in a somewhat similar manner. Considering, first, that branch which has consisted in the development of the power of intercommunication, we see that each step has been the result of a new discovery which may be regarded as in one sense fortuitous, and without which the level previously reached might not have been quitted for an indefinite period, or which might, for aught we can see, have been made ages earlier than it actually was. The Greeks might as well have had the printing-press as to have had its invention postponed for two thousand years after the literature of Greece had reached its zenith; or we may easily conceive of the total failure to realize that invention for another thousand years from the date of the actual event. Along the other line of material progress this is even more obviously true, and

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have sought to make out that science was not hostile to theology have not been so clear-sighted as their opponents" ("Popular Science Monthly," vol. xiii, p. 216).

stands out in great clearness toward the last end of the line. What was said of the printing-press might with equal propriety be said of each of the great epoch-making discoveries and inventions of the present age, or of preceding ages, and it is to these that material progress is chiefly due. Society, therefore, like organized life in general, has reached its present position by executing, as it were, a series of successful flank movements, each accomplished with rapidity, and separated by long intervals of stagnation.

We also saw that the real progress of the race had been very much greater than appears upon a comparison of two distant epochs, in consequence of the fact that a large share of the real amelioration has always been neutralized by immediate absorption in the increased number of individuals whose existence it has rendered possible. This fact points to the importance of all means which tend to prevent this result. Every thing which tends to convert this latent progress into active progress will be in the direction of the true social development and amelioration of mankind.

If society shall ever awake to consciousness and recognize the true object of conation to consist in the attainment of happiness, and the true meaning of progress as that which conduces to that end, the control of the social forces by the aid of attractive legislation will gradually smooth off the rhythms in its advancing current, and give living force to all truly progressive measures.

CHAPTER XI.

ACTION.

DIRECT MEANS TO PROGRESS, OR SECOND PROXIMATE END OF CONATION.

General relations of action to progress—Classification of actions—Involuntary actions—Automatic actions—Compulsory actions—Voluntary actions—Nature of the will and the moral sentiment—Impulsive actions—Inconsistency of the moral code in condemning and commending certain emotions—Love—Anger—Ambition—Avarice—Impulsive actions possessing moral quality—Impulsive actions devoid of moral quality—Philosophy of habit—Deliberative actions—Deliberative actions possessing moral quality—Nature of the conscience—Virtue and vice—Responsibility—Crime—Normal deliberative actions—Supra-normal, or altruistic, deliberative actions—Deliberative actions devoid of moral quality—Dynamic actions—Man's dominion over nature—Examples of the application of the indirect method of conation—Knowing, knowing how, and doing—Individual and social dynamic actions.

In the two preceding chapters we have seen—

1. That true utility consists in the increase of human happiness, which is the ultimate end of all voluntary effort; and—

2. That social progress, such as it has been defined and described, constitutes the immediate and direct means to that ultimate end.

Since the increase of happiness upon a large scale can not be secured directly, it becomes necessary to inquire how it can be secured indirectly. Progress being an immediate means to that end, and the only immediate means, the question is reduced to a consideration of the means to progress.

It is clear that in a general way this must consist in some form of *action*. If the ultimate end could be *directly* secured, it would require to be done by means of some kind of action. In that case, the civilizing influences of society might be left out of the account, and this class of action necessary to work an increase of happiness without their aid would then constitute the immediate means instead of the secondary means. It is commonly supposed that human happiness can be increased in this direct way by certain forms of action. The ethical code rests on this assumption. Within narrow limits the assumption is true. Men can not only be taught to do right but to do good, and both justice and philanthropy exist in the world. But progress of this kind is empirical, unsystematic, superficial, and unstable. It must ever proceed from the same base of operations. It may make deeper inroads in some directions and at some times than others, but can only go as far as it can reach. True progress is ever advancing, or, if compelled at times to recoil, it gathers strength and again moves forward, leaving every thing behind it. As we have seen in the last chapter, the amount of progress actually realized, including what was distinguished as latent progress, has been constantly measured by the march of material civilization due to the arts and sciences. Moral systems have contributed nothing to this result.

Since man has been upon the earth he has accomplished many things. He has ever been active both physically and mentally, and the results of his activities are every-where visible. He has put in operation each of the great agencies enumerated in the last chapter, all of which have been the result of one form or another of human action. As we saw, some of these proved progressive, others preservative of progress, and others non-progressive or anti-progressive. It is evident, therefore, that a large part of the activity of the race has been lost in non-productive enterprises.

In the first place, only those actions which have sprung from the intellect have proved progressive; and, secondly, only that class of intellectually directed actions which were the results of a correct interpretation of phenomena, and consisted in some application of correctly perceived principles of nature to human needs, have so proved. This limits the range of progressive activities immensely, and suggests the paramount importance of a thorough and fundamental acquaintance with the nature of all classes of actions.

Progress is an artificial phenomenon, *i. e.*, it is the result entirely of human action, a truth which is not in the least affected by the fact that thus far there has been little or no conscious design on the part of man to improve the race at large. That result has been to a considerable extent accomplished, and it has been accomplished by the one particular class of actions above named. It is therefore of the utmost importance that the nature of this particular class of progressive actions should be perfectly understood and clearly distinguished from all other classes. An investigation of this question from this point of view will therefore be seen to be a very different thing from a treatise on morals or an inquiry into the nature and elements of the various ethical codes, as the title of this chapter might lead some to anticipate. Still, since actions having an ethical character constitute an important and extensive class, a somewhat detailed survey of them will be necessary in its proper place. The first requisite, however, must be to work out a strictly logical classification of human actions.

This is by no means an untried field, and the most salient distinctions have long been settled beyond the power of any future writer to disturb them. The chief object of the present attempt will therefore be less to go deeper or to reach further than others have done, than to erect a system with the especial object of bringing the field of human action completely within the purview of this particular work. The structure may contain substantially the same materials, but will be built after a somewhat different style, to adapt it to a different purpose.

The only new feature connected with it will perhaps be the novel point of view from which it proceeds. In all attempts heretofore made to classify human actions, the distinctive aim has been to arrive at a better grasp of their ethical qualities. However far downward or outward they may have reached after terms for better illustration and comparison, the chief attribute sought has always been the moral. In the present attempt, on the contrary, the influence of the feelings, which is the characteristic of moral actions, is merely recognized as an observed phenomenon, valuable only as an aid to the full comprehension of the influence of the judgment. Excursions made over the fields of physics, physiology, and ethics, will have in view solely to illuminate the paramount problem of intellectual action. When the true nature of the Social Forces, as defined in Chapter VII, is adequately grasped, the physical, physiological, and ethical problems are already solved. The only problem remaining is the intellectual problem. The former forces being wholly analogous to all the other natural forces which intelligence has turned to human advantage, it must next be seriously inquired how these, too, are to be turned to human advantage. Since the forces are homogeneous, the failure thus far to treat them all alike must be due to some defect or peculiarity in the intellectual faculty.

Physical action, physiological action, and ethical action are fixed by invariable laws. They are like the air, the water, the electric and magnetic currents, or the thermic, luminous, and actinic agencies. Before intelligence, they are passive; they do the bidding of the intellect. Placing the ethical forces upon this footing gives meaning to the otherwise meaningless words, "Moral Science." And as we investigate all other classes of forces with a view to controlling them, so must this class be investigated with that view. Is this now done? Manifestly not. There is something lack-ing in the guiding force. What the defect is, is not clear even to those who admit all the rest. It is this guiding force, therefore, that most requires study. The nature of intelligence with reference to the social forces needs to be inquired into. The class of actions to which attention should be specially directed is the intellectual class. It will therefore be the primary aim of the present effort at classifying actions to bring this class prominently into the foreground.

Classification of Actions.

The two primary departments into which actions of all kinds are essentially separated, as has long been recognized, are those of *voluntary* and *involuntary* actions. Involuntary actions, as is clear, concern us here very little, though nothing that at all affects living beings can be wholly ignored without marring the symmetry of the system. It will not be necessary to go further with this class than to note the primary subdivision of them into *compulsory* and *automatic.*

The primary subdivision of voluntary actions is into *impulsive* and *deliberative.* The former correspond to what the physiologists class as *sensori-motor*, and the latter to what they class as *ideo-motor* actions.

Impulsive, or sensori-motor, actions may be further divided into *ethically indifferent* actions and *moral* actions. Indifferent impulsive actions are such as exert no influence upon the feelings of sentient beings, either of the agent himself or others. They are not of sufficient importance to demand a closer analysis here.

By moral impulsive actions are meant actions having a moral quality, *i. e.*, exerting an influence upon sentient beings, and producing pleasure or pain either in the agent or in others. In either case, not only the act but the effect is intended. This class may be subdivided on a number of independent principles, and in many of its aspects it runs parallel with the corresponding group of deliberative actions next to be considered.

Deliberative, or ideo-motor, actions also fall into the two primary classes analogous to those of impulsive actions, viz., *moral* and *non-moral*.

Moral deliberative actions we will divide into the two distinct groups, depending upon whether the normal and natural relation of equality is recognized or whether sentiments exist which transcend the recognition of this relation. Actions belonging to the former group are classed either as just or as unjust; those belonging to the latter, as beneficent or as maleficent.*

The non-moral deliberative actions have no direct influence upon the feelings of sentient beings, and do not necessarily have any further effect in any direction than the mere maintenance of the life of the individual. But one important group of them has for its normal and legitimate result the improvement of the temporal estate of the agent, though in an indirect way, which distinguishes it sharply from the moral class of actions. This effect is produced by certain dispositions which actions of this class make with the natural objects upon which they are exerted, whereby the qualities of these objects, the forces acting upon them, and the relations which they are thus made to sustain to one another and to the agent, conspire in securing advantages to the agent, rendering him more comfortable and better able to produce a surplus above his immediate wants. We may therefore divide this group into the two sub-groups of static, or non-progressive, and dynamic, or progressive, actions.

In the above concise sketch of the principal divisions and subdivisions of human actions, each of which will be considered more in detail presently, the least important classes have been first disposed of and the most important class placed at the end, where, under the circumstances, it receives greater emphasis, because its relations to the other classes, and therefore its true character, must thus be better understood. In other words, for this preliminary survey of the field, it was deemed best to proceed analytically.

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* Spencer, "Data of Ethics," p. 282.

In harmony with this part of the general plan, the following diagrammatic representation of the subject is added, by the aid of which the various co-ordinate and subordinate groups may be perceived at a glance :

Actions are:
- Involuntary.
  - Compulsory.
  - Automatic.
- Voluntary.
  - Impulsive, or Sensori-motor.
    - Possessing moral quality.
      - Normal, or Egoistic.
        - Just.
        - Unjust.
      - Supra-normal, or Altruistic.
        - Beneficent.
        - Maleficent.
    - Devoid of moral quality.
  - Deliberative, or Ideo-motor.
    - Possessing moral quality.
      - Normal, or Egoistic.
        - Just.
        - Unjust.
      - Supra-normal, or Altruistic.
        - Beneficent.
        - Maleficent.
    - Devoid of moral quality.
      - Static.
        - Indifferent.
        - Conservative.
      - Dynamic.
        - Individual.
        - Social.

INVOLUNTARY ACTIONS.

To say that an act is voluntary is merely to say that it is done in conformity with the *desire* of the agent. The conative faculty represents simply the force of the desires which constitute the motive power popularly termed the will. This reduces the field of really involuntary actions to very narrow limits, and remands it chiefly to the department of biology.

It is true that Blackstone,* while he takes no account of automatic action, enumerates, in addition to coercion, two other cases in which, as he states it, "the will does not join in the act." These are, first, where there is a defect of understanding; and, second, acts done by chance or ignorance. This last case embraces two classes of actions nearly as distinct as the first, while in reality all these three may be reduced to one. For while, on the one hand, an act done by chance is really due to ignorance of some of the conditions, so, on the other, ignorance, in so far as the act in question is concerned, constitutes a defect of the understanding. But, as the understanding grows feebler relatively to the action, it approaches in that degree the automatic condition.

By a continuation of this gradation, the automatic actions of living organisms approach nearer and nearer to merely physical movements. The motions of the particles of inorganic matter would seem to be almost as much entitled to be called actions. The beating of an animal's heart is no more an action of that animal than the pulsations of a hydraulic ram are actions of that machine. The circulation of the blood and other fluids of the body is no more an act of the body than the circulation of the sap and juices of a plant is an act of the plant. The cause which produces the one is as purely physical as that which produces the other, and in either case there is no principle that exhibits any power of a higher order than that which causes a sponge or a lump of sugar to take up water, and raise it against the force of gravitation. It is more complicated in the former cases, and it is not accomplished on precisely the same principle, but it is no higher principle, no less purely physical.

The mechanism of the animal body involves no principle not already known to natural philosophy. Most of its laws have been applied to some of the artificial machines in use by man. Its general arrangement differs very little in principle from that of the steam-engine. It is a machine kept in operation by the heat generated by fuel supplied from external sources. It is provided with furnace, bellows, feed-pipes, force-pumps, waste- and exhaust-pipes, ropes, journals, lubricating oil in well-arranged oil-cups, and all the other appliances for the performance of all its functions. It acts as the steam-engine acts when the steam is up and the cocks are turned, and it ceases as does that machine when the supply either of fuel or of constituent material is exhausted. The motions of the one are as much and no more entitled to be called actions than those of the other.

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* "Commentaries," book iv, p. 21.

But there are certain animal movements which are partly voluntary and partly involuntary. The winking of the eyes is an example. It can be prevented for a time, but not for a long time. The will seems to have limited jurisdiction over it. The same is true of the actions of the respiratory organs. With regard to these last, however, it is possible, in some cases at least, that a strong effort of will may be sufficient to make them cease altogether. In all these cases the natural functions are performed unconsciously. The will is only exercised to suspend these functions temporarily. There are, on the other hand, some cases in which the will must be strongly exercised to produce action. Thus, some persons have acquired the power by persistent exercise of the will to move the muscles of the ear, though most persons can not acquire this power.

In the lower animals a much larger number of their actions are automatic, or consensual, than in man, so that it would seem that between the simplest reflex action and the highest act of intelligence there exists no absolute line of demarkation. For example, my canary requires just three conditions—two external and one internal—to make it sing, viz., a certain amount of light, a certain amount of noise in the room, and a certain degree of hunger. The certainty of its singing under these conditions is as great as that of an engine moving when the required amount of steam is turned on. On a full stomach nothing can make it utter a note. But suppose the second and third conditions present, and the cage darkened by a veil. Unveil it, and the machine starts. Or, suppose all but the second condition supplied, and let the room be perfectly quiet. Then let some one begin to speak, or touch the piano—away it goes like a singing hydrogen-flame. These semi-voluntary motions further tend to prove that the power which the will has over the various motions of the body is of all possible degrees, from that which we are always entirely unconscious of exercising, to that which results from mature deliberation.

But if this be the case, and the so-called involuntary actions are purely physical, does it not argue a will-power in the vegetable and the chemical?* To answer this question, we must first determine definitely what we are to understand by a will-power. What is the will? It has already been shown (vol. i, pp. 394–401) that will is nothing more than desire; that to desire is to wish, and to wish is to will.

Is there, then, no line which divides the voluntary from the automatic actions of animals? If there is such a line, it must be where consciousness first appears. It would be, of course, exceedingly difficult to fix that line, but, once fixed, it seems to satisfy the question (vol. i, pp. 364, 386). Since, however, this difficulty can only exist in those cases which lie close to that line, and since these will be comparatively few, very little embarrassment will ever arise in endeavoring to ascertain on which side of this line a particular case of action lies. Hence, we may adopt it as a convenient rule that an action is voluntary if the actor is conscious of its performance, and involuntary if he is unconscious of it. But this rule does not, of course, apply to acts committed by reason of external compulsion. Of these we will now speak.

A man may be compelled to perform an act in several ways.

First, he may be forced to do it by some moving, inanimate object. In this case, he is simply to be regarded as an inanimate body himself. He does not do the act any more than if he had been such an object instead of a man.

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* Haeckel, "Die heutige Entwickelungslehre," u. s. w., S. 14, 23.

Secondly, he may be seized by the one who compels him, and who uses his limbs instead of his own to accomplish the act. In this case, the party exercising the compulsion is the real agent, and the act is his act and is a voluntary one. The party compelled is no more an agent than in the first case.

Thirdly, he may be compelled by force to do an act with his own hands or members. He may be forced to walk to jail, or to labor, or to sign his name. This is the most usual case. An act so performed is, in common parlance, denominated involuntary. It includes all involuntary servitude, acts done under duress, etc.

It is unnecessary to make a fourth class, consisting of acts moved by threats of violence or coercion, since, strictly speaking, all such acts are of this last class. The force, though applied, is not the moving power. If it were, it would fall under the second case. It is only the fear arising from the prospect of being forced, and thereby made to suffer pain, that forms the real motive for the action. A man who is being escorted to jail is not absolutely compelled to walk; it is the express or implied threat that if he does not walk he will be dragged, that induces him to walk. This distinction may, therefore, be dropped, and all this class of actions considered together. It was remarked that in ordinary language acts of this class are called involuntary. But in strictness they are not so. Every act that a person performs involves a choice; that is, every time he undertakes to act, there are presented to his judgment more than simply that one course; often he sees many courses that he might pursue, frequently several which have almost equal claims. If he is eating, there may be many kinds of food, all equally good, but he only takes one kind at once. Of course, in most cases, the preference is clear and distinct. But in every case there is an alternative. If it is no other, that of doing or not doing must always remain, and an act of omission is as much an act as one of commission. Now, to make the application of this to the case of compulsory action last mentioned, we see at once that every such act is nothing more than an alternative between doing the act required or suffering the consequences of refusing to do it. A man need not sign his name, although he may be certain that unless he do so he will be shot. The action is voluntary. Two courses lie before him. He chooses the one or the other. This conforms to the true definition of a voluntary action, one in which there is an exercise of the will. The first two of the cases stated above are, therefore, involuntary; the third is voluntary.

We see, therefore, to how narrow a span the subject of involuntary actions may be reduced. The so-called involuntary actions of the animal system are mere physical motions. The first case stated of forcible human actions reduces the involuntary agent to a mere lump of matter; in the second case, the immediate agent is no less virtually inanimate, and the person compelling is the real agent and a voluntary one; while the principal class of actions popularly known as involuntary are in reality voluntary.

Before passing to voluntary actions, it may be well to refer to the tendency, pointed out by other authors, and already discussed from its psychological side in a previous chapter (vol. i, pp. 186, 188), on the part of voluntary to pass into automatic actions. As just remarked, the special characteristic of voluntary actions is the accompanying state of complete consciousness on the part of the agent. This is only to say that the motor discharge which results in their production proceeds from the supreme nervous center, or brain (sensorium), to which all the subordinate nervous shocks converging to produce it have been referred. The transition from the completely voluntary to the more and more automatic consists simply in the more and more pronounced failure of these contributing shocks to reach the supreme center, accompanied by the greater and greater proportion in which subordinate ganglia come to supply the place of the principal ganglion in constituting motor centers for the discharge. And just as we previously saw (vol. i, p. 374) that these subordinate centers really constitute independent reservoirs of sensation with a consciousness of their own, so distinct from the supreme consciousness that the latter can not sympathize with sufferings experienced by the former, so we now perceive that in like manner the subordinate centers, when not integrated with the chief center, constitute independent sources of action for which the whole organism is not responsible.

VOLUNTARY ACTIONS.

We will next proceed to the consideration of voluntary actions.

It will be necessary to begin by inquiring somewhat more closely into the origin of such actions, the pre-existent conditions and psychic faculties, and the means by which these operate in order to produce them. For actions, like all other effects, are *produced*, *i. e.*, they are caused. They are not spontaneous, or independent of external influences, as many seem to suppose.

It is a mark of intelligence to seek in every possible way to disguise the fact that action flows from antecedent causes, and the Bishop of Carlisle boldly says, "Tell me, in any given circumstances, what those circumstances will lead me to do, and I will undertake to do something different" ("Nineteenth Century," March, 1880), apparently forgetting that his resolve would then constitute a most important "circumstance"; not an insuperable one, however, for it would not prevent him from rescuing a friend from death even at the risk of verifying some one's prediction as to what he would do under the circumstances.

A prevalent mode of concealing the dependence of actions upon conditions is seen in the varied forms of *eccen-*

tricity adopted, which consists simply in doing things which would not naturally be expected under the circumstances —the motive of concealment, a predominant causal circumstance, not being supposed to be known to the observer. There are all degrees of eccentricity, from the delicate art of surprise in literature known as "originality" to the coarse and offensive oddity of the clown. The intermediate forms, however, are the most common, and manifest themselves in various ways. The numerous arts and affectations of life are made up of these strainings after individuality which is supposed to distinguish human from animal action, and to demonstrate the arbitrary freedom of the will, but in all cases the true antecedents are internal and constitute what may be called the *subjective environment.*

There is some little machinery behind voluntary actions, and a regular train of inseparable antecedents connects them with the physical organism of the agent in a uniform and necessary way, so that they can be traced, studied, and explained. A necessary part of the definition of this class of actions is, of course, that they must involve the exercise of the will. As already remarked, and as more fully shown in Chapter V (vol. i, p. 394), the will is simply a form of desire; but, in addition to what has been said respecting it, we now find that, before we can proceed with the present discussion in an intelligent manner, we shall need to devote some further consideration to this essential basis of voluntary actions.

The phenomena of mind all rest primarily on sensation, that property inherent only in nerve-matter, by which it acquires a conscious susceptibility to external impressions, (vol. i, p. 364). They are primarily divisible into two classes, agreeable and disagreeable. The former constitute pleasure, the latter pain. Sensitive matter always seeks the one and shuns the other. This state of being which thus inclines to seek pleasure and shun pain is denominated desire. A desire is therefore a mere inclination to experience agreeable or escape disagreeable sensations (*supra*, p. 49). But, while nothing but this bare state of being exists, no result is accomplished. This state of mind will not of itself secure the object desired; it neither affords pleasure nor relieves pain. Hence, and of necessity, there is always attending, and involved in, the state of mind a tendency to *act*. The two are inseparable. A desire can not exist without an inclination so to act as to secure the gratification of that desire. Yet it is clear that the act and the desire are not the same, since most desires are not followed by actions. But they are so intimately dependent that no act can be performed which does not spring from a desire. This is the definition of a voluntary action: an action that springs from the will, *i. e.*, from the desires. This is the only kind of action that properly belongs to sensitive beings. We see what a close relation they sustain to the distinguishing characteristic of such beings—their sensitive organism. Actions of any other kind are scarcely more than mere physical motions. Voluntary actions, therefore, are really the only actions with which we have any thing to do. They not only embrace the entire field of ethics or morals, but that of social progress also.

But, while we are inquiring into the nature of the basis of actions—the desires—and learning that they are those states of mind that involve a tendency on the part of the individual experiencing them to act in such a manner as will satisfy them and cause them to cease to exist, we may profitably go a step further and inquire into their origin. Primarily, as we saw (vol. i, p. 469), they arise from the contact of external objects with the sensitive organism. It is such objects that produce the sensations, upon the quality of which the desires depend; hence, external objects may be said to be the originating cause of desires. The totality of such objects impinging upon the organism constitutes its adapting environment, to the consideration of which subject Chapter VIII was chiefly devoted, and any attempt to go further back for the causes of action would involve us in the questions arising out of causation, which were discussed in that chapter.

In the lower forms of life, and to a preponderating extent in man also, taken in his entirety, the whole process consists in motor discharges generated in the sensorium from the various sensations produced by the presence of the objects of desire to the organs of sense. These range all the way from mere reflex actions to the somewhat systematic efforts of individuals to satisfy the primary wants of life, to defend themselves and offspring from assault, and even to acquire property. The satisfaction of all the sensual appetites and natural instincts belongs to this class, and even the acts performed in obedience to the higher derivative appetites and emotions, such as avarice, love, etc., must be so referred. But, psychologically, such actions are primary, and emanate directly from the peripheral and not from the cerebral seats of sensation. Yet all desires, or volitions, do not spring immediately from such external contact. There is a large (and, in fact, as far as the present subject is concerned, the most important) class which proceeds indirectly, or mediately, from the influence of surrounding circumstances upon the perceptive faculties. The intermediate stage which separates the primary sensation from the volition is an intellectual judgment.

In a previous chapter (vol. i, pp. 381, 386) it was shown that accompanying every sensation, and forming an inseparable part of it, there is a correlative *perception*, conveying to the mind a *conception* of the *qualities* of the objects producing the sensation. The sensation and the perception are isochronous. The one may result in an immediate desire either to repeat the experience or to avoid a repetition of it. And this desire, if strong enough to overcome all opposing desires, will culminate in a corresponding action. The other conveys to the mind a conception of the object which has produced the sensation. This conception is then ready to be compared with other conceptions already in the mind, and this comparison may result in a judgment of the intellect, or an opinion. Opinions are generally legitimate causes of desires. They are not produced by desires, but they themselves produce desires. This is evident from the nature of a desire as defined, viz., an inclination to experience pleasure and avoid pain. It makes no difference through what faculty that inclination comes, or whether it comes directly or indirectly from the original source of experience, the senses. It may come directly from the intellect—from the cortical layers. In the case of desires resulting from opinions, it does so come. By comparing one conception with others, the mind concludes that a repetition of a certain experience would secure greater pleasure than pain, or avoid more pain than it would occasion. This is a judgment, and the inclination spontaneously arises to execute it. This inclination is as much a desire as if it arose immediately from an experience of the senses. Like all other desires, it is accompanied with an action, provided it be stronger than opposing desires.

Thus we see that there are two sources from which our desires spring, and, as all actions are the result of desires, there are two distinct classes of actions depending on the sources from which they emanate: the one from sensations, the other from opinions; the one from the subjective branch, or department, of the mind, the other from the objective; the one from the sensibilities, the other from the intellect. This is the philosophy of the popular classification of human acts. The first class are emotional, or impulsive; the second, rational, or deliberative. And, if any distinction could be made between the desires and the will, here is where the line should be drawn. Unfortunately, however, popular language does not support this classification, the term "will" being sometimes applied to the rational resolutions of the mind, but quite as frequently to its irrational impulses.

Now, it is but natural that the desires which emanate from these two sources respecting the same thing should sometimes conflict. In fact, they do very frequently conflict. And here is the origin of all those internal mental battles of which the records of man's interior history are as full as are those of his exterior history of the battles of armies.

The especial importance and interest of this subject will warrant, and perhaps demands, an illustration. Let us suppose a familiar case. A man has acquired a fondness for spirituous liquor. To his palate and whole nervous system, its effect is agreeable in the extreme. We will imagine a glass of his favorite beverage to be placed before him. The liquor is a material object which, if he drinks it, will come in contact, first, with his gustatory nerves and afterward with his brain and general system through the circulation of the blood, and will produce its customary normal and to him well-known effects. To him these effects constitute a highly pleasurable experience which repeated previous like experiences enable him vividly to anticipate. A powerful inclination hence arises to renew the experience. If there were no inclinations antagonizing this one, it would certainly be immediately followed by the act of drinking the liquor. The inclination to perform this act is simply a *desire*. As such, however, it belongs to the first of the two great classes, and is properly called an impulsive desire. It springs immediately from the senses. No intellectual influence intervenes. The order is direct: first, the object; second, the sensation; third, the desire; fourth, the action.

But suppose another element to be introduced. The man has had such experiences before. He has previously indulged his passion and enjoyed the pleasure of its gratification. But he has observed that every such indulgence has been followed by a reaction; that every such excess of pleasure has been followed by an equal excess of pain; that when under the influence of the draught he always performs acts which inflict humiliation and mortification upon him after its effect has passed off; and he has concluded that, on the whole, the pain is greater than the pleasure, and he is invariably the loser.

These facts amount simply to an amplification of the knowledge he possessed respecting the qualities of the liquor. It is necessary to take them all into the account in order to complete his mental conception of the object. It has the property of affording him pleasure, but it has also the property of affording him pain; and the latter, though it comes last, is greater than the former. A knowledge of both these qualities constitutes his conception of the object which tempts another experience, and has aroused a powerful impulsive desire to perform the act which will secure it. This conception is complex, because the object has two distinct sets of qualities, but it is the conception not of a quality but of the object itself—of all its qualities. We may distinguish it as an idea, *i. e.*, a complex conception.

Now, by a comparison of conceptions, or ideas, we obtain judgments, or opinions. The man has this idea, his idea of the liquor. He immediately compares it with other ideas. He compares it with his health, with his relations to his family and to society. A judgment simply declares the conceptions to agree or to disagree. In this case, the judgment declares that the objects compared disagree; putting his best interests on one side and the effect of indulgence on the other, his judgment says that they do not agree. This judgment is an opinion. An opinion begets a desire, or volition. Since every desire is to obtain pleasure or to avoid pain, and he is of opinion that to drink the liquor in question would cause more pain than pleasure, the only desire that could spring from such an opinion would be to refrain from drinking. The act, therefore, that would result from such a desire would be that of so refraining. If this were stronger than the desire to drink, he would not drink. The desire in this case springs from the intellect—from the objective branch, or department, of the mind. It is indirect. The regular order in this case is this: first, sensation; second, perception; third, conception; fourth, judgment, or opinion; fifth, desire; sixth, action. But we see that the action in this case, if it take place, will be precisely the reverse of what it would be in the previous case. The impulsive action would be to drink, the deliberate action would be to refrain.

Here, then, is a conflict of desires. The man desires to drink and he desires to refrain. But, though both the desires may exist, the acts which their gratification requires are incompatible. To gratify both is a physical impossibility. Either the one or the other must yield; one or the other must triumph. Is there any general law by which the result can be predicted? That one which has reason on its side is by no means always victorious. It does not certainly depend upon the right or justice of the case. In our example, we have supposed the man's best interests to lie on the side of the rational desire. Indeed, this is usually the case, though by no means always. It is very possible for impulses and intuitions to be safer than the most deliberate judgment. Such cases may be exceptional, but such exceptions are by no means rare. It is proverbial that the female mind, unaccustomed as it is, in the present state of society, to reason closely, passes to correct conclusions in many cases where the logical mind of man misses the truth after the most careful consideration.* And every body knows how, on many great political and judicial questions, the slow detail and careful technicality of legislators and judges do violence to truth and justice, while the public mind has seen the justice of the case from the first, and suffers sore disappointment at the manner in which truth has been smothered under the forms of logic and of law.

Still, as in the case supposed, truth is usually on the side of deliberation when in conflict with impulse. But it does not by any means follow that that side will triumph on which truth or interest resides. If this had been the case, this subject would not have attained that degree of importance which now attaches to it.

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* "The woman that deliberates is lost." (Addison's "Cato," Act iv, Sc. 1.)

What, then, is our guide as to the result of such conflicts? It depends solely upon the relative *strength* of the desires. The strongest desire must prevail. The action follows the strongest inclination. The man yields to the most powerful influence. It is not the *man* who fights the battle and decides the issue. It is the forces within him. It is not the introduction of a third force of his own by which he settles the controversy. He is merely the battle-ground. The result does not depend upon any thing he may do. Whatever he does is the *result* of the conflict. His impulses and opinions both depend upon circumstances. Hence his acts must also depend upon circumstances. If his animal instincts have been allowed a loose rein, if he has had no education, he will probably yield to impulse; but, if he has been trained in schools of discipline and intellectual instruction, if his reason and judgment have been cultivated, if his opinions are definite and firm, he will resist impulse and defer to his better judgment.

The strength of opinions determines the strength of the volitions to which they give rise, and the strength of those volitions determines the probabilities of the acts which they incite. The impulsive desires are in an equal degree dependent upon all those circumstances which determine deliberative ones. Whichever course the individual adopts, we may depend there will be a reason for it. That reason is a necessary one, an immediate moving cause. It is not his will; it is behind his will and controls it, and through it the action. The only test of what the strongest inclination is, is the act itself. To say that any one ever acts in a manner contrary to the strongest inclination, is equivalent to saying that a body may sometimes move in a direction contrary to the resultant of all the forces acting upon it. Ethics is the science of psychological mechanics.

The division of actions into such as spring from the subjective branch of the mind, from the sensibilities, and such as spring from the objective branch, or the intellect—into impulsive, or emotional, and deliberative, or rational—is one that is sustained as well by fact as by theory.

Let us examine each of these classes of actions for a moment, with a view to discovering, as far as possible, wherein they differ.

The first is the natural, or normal, type of action; not that the other class is not in perfect harmony with natural law, but simply that, in the regular order of mental development, the first named would be also chronologically first, and, as it were, original; the second being derivative.

As we trace man back from the civilized to the savage state, we find his impulses controlling more and more exclusively his actions. If we could carry our minds back to a time when he occupied the place of a wild animal, we might imagine him wholly divested of rational desires. Let any one watch the acts of any animal, wild or domestic. What controls them? Observe, for example, the house-dog. Now he lies lazily stretched out under the kitchen stove. The fire becomes warmer, and he gets up, yawns, stretches, then leisurely walks a few steps farther off, and again lies down. Suddenly another dog without barks briskly. He jumps up, pricks up his ears, and runs for the door. If open, he darts out, and perhaps pursues the other animal, or perhaps he attacks a pig or a cow in the street. In a moment he quietly returns to his former position. All this is exceedingly simple and familiar to every body. Yet there is involved in those simple and natural acts a profound philosophy. Every one of them was produced by a motive. Each separate act of the animal was the result of a desire, an inclination, an inner prompting to perform it.

Now, we can not separate the acts of a dog generically from those which men perform. We can see no distinct principle in the acts of a child. They are marked by the same spontaneous movements — often, indeed, displaying even less intelligence. The acts which an animal performs are performed in obedience to its *will* as much as those of a man. The will controls the action but it does not control itself. Yet no one ever talks about the free-will of a dog. The advocates of the free-will doctrine admit that animals have no such freedom. They seek to draw some line between them and men in this respect. But where is the line between an animal and a child? or between a child and a man? All the actions of animated beings are subject to the same law. They all take place in obedience to desire, or will, the physical affection, or state, which inclines them to act. The only distinction having any foundation is that above made, and in both these classes the desire, inclination, or will is the controlling influence. It controls the action as its immediate antecedent, but its own existence depends not on itself, but on definite causes, or circumstances. If the will could control itself, there would be a phenomenon without a cause, and both men and animals would be gods.

Under which of these heads, then, do the acts of animals stand? Clearly, under the first class, or impulsive actions. This is the greatest distinction that exists between the acts of animals and those of men. The acts of an animal are all impulsive, while those of a man are only part of them so. To man alone belongs this second class, or deliberative acts. When an animal moves, it is the direct result of a present physical desire, a feeling. It feels like moving, and consequently it moves. But when a man acts, it may be either this same present inclination, or it may be in obedience to a desire begotten of an intellectual judgment, acting independently of, or in opposition to, this immediate physical sensation.

If this were positively without exception, it might form a pretty clear line of demarkation between man and the brute. Indeed, it is the line which ethical writers have always been seeking to draw, without ever being able distinctly to define it. They say that man is a free moral agent. But this conveys a very indistinct idea. They say that he is capable of discerning the moral quality of actions. This is little better. They say that he has a free will. This we have seen to be false in the sense intended. They say that he knows the difference between right and wrong. This depends upon his knowledge of the effect of his actions, and is not true, in his present state, any oftener than it is false (*supra*, p. 141). And this is the loose manner in which they have always been straining at this principle without reaching it, often sacrificing truth in their efforts. The difficulty with them has been twofold: first, a failure to base their speculations upon a firm foundation in physical science; and, second, a preconceived notion that there actually exists a fundamental difference between men and animals in respect to their acts.

Now the truth is that, though for all ordinary purposes the distinction above drawn is a correct one, still it must be taken with certain qualifications. Between an ordinary man and an ordinary brute, it will rarely fail to hold good. But there are three cases where man, in a general sense, approaches and, I think, actually meets the plane of the brute creation, as far as his acts are concerned: 1, in childhood; 2, in idiocy; and, 3, in extreme savagery.

As regards childhood, the only difficulty is in fixing the age at which the rational faculty begins to be exercised. This differs in different individuals, and, of course, no arbitrary rule can be established. But there certainly must be a period, some time in the life of every child, when it can not perform a deliberative act. If it is at no other time, it must be immediately after birth. For, from the nature of such acts, it must have first formed a judgment, and a judgment arises from the comparison of two conceptions. But at this period the child can have no conceptions, having had no experience from which to receive them. Hence it can have no judgment, and consequently no deliberative action is possible. But in point of fact it does not make use of any judgment till a somewhat later period. The acts of an infant are all of the impulsive kind. They spring from present physical wants and inclinations. Infants act as they feel prompted to act at each moment. They cry and laugh, play and sleep, just as their bodily demands arise. It is not usually until they attain the age of two or three years that they to any extent heed the dictates of reason or judgment. With respect to their actions, they are in every way on a par with the animal creation, their movements being wholly impulsive, or at least as much so as are those of some animals. This is so of necessity, and does not in the least detract from the dignity of human action.

As regards idiots, it is necessary to repeat that they are nothing more nor less than beings having the form and stature of men, but with only the minds of animals (vol. i, pp. 419, 420). I refer to cases of natural idiocy, and not to those where dementation has been caused by disease or accident, for in these latter it is more correctly speaking derangement, a condition to which both animals and men are subject. But congenital idiocy is often simply lack of intellect, and not properly pathological. The power to form judgments and draw conclusions does not exist. The organ of the mind is less perfect than in cases of sound minds. If so, wherein do they differ from the inferior animals? The idiot feels as well as the brute. He possesses all the senses. He has the same desires, appetites, passions. He has also a perfect nervous and muscular system. In him, as in all other living beings, a desire, or inclination, is succeeded by an action. He acts in the same manner as any man or animal, only, like the latter, all his acts are the result of present physical inclinations—impulsive, never deliberative. Again, there is no fixed line of demarkation between idiocy and sanity any more than there is between childhood and maturity. We all know that men who are deemed sane have varying intellectual powers. To say that all men are equal in intellect would be to deny the facts every day presented before us. We know, too, that there are degrees of idiocy. Every one has seen examples of this kind. There are those who seem to have scarcely any mind at all, who for want simply of sufficient knowledge can not feed and dress themselves. There are others who have a very little more sense, who can do these things, but have not intellect enough to apply the principles of language to articulate speech, though they have perfect organs. The next grade, and the one which is most commonly met with, is where the idiot can talk and comprehend, and in many ways make himself useful. A still higher grade of idiots exists, capable of entering into industrial pursuits, earning their own livelihood, and often becoming skilled in some particular trade. And then there is our half-witted person, who may have learned to read and write, perhaps have attained some proficiency in other higher intellectual pursuits, but seems to have no talent, genius, or tact for applying them or getting on through the world—clearly *non compos mentis*, though not idiotic. From this it is but a step to the man of inferior mind whom we meet every day. These intervals are completely filled up by cases where the person may exhibit some ability in a certain single direction, but is totally deficient in many or perhaps all others; or by other conditions varying in one way or another from the precise degree described. There is probably no shade of intellectual capacity, from that of a total want of judgment to the most towering human intellect, that has not its exact representative in the human race. It is only a gradation in the quality and quantity of brain-power. If, then, there be men of mature age and possessing all the knowledge of which they are capable, and yet incapable of performing deliberative, or rational, acts, and confined as strictly as brutes are to the performance of impulsive acts, we perceive that our rule, though in the main true, has another very important exception.

The third exception has a much broader application. For not only are there thousands of human beings now inhabiting this globe who subsist in most respects like the brutes, and act only as prompted by their immediate impulses, but who shall say how many millions more have thus lived in the vast, undeterminable, prehistoric ages which have seen the race created and carried upward through unknown transformations to civilization and enlightenment?

It has been already remarked that, as we trace man back from civilization to barbarism, we find the deliberative character of his acts disappearing in proportion as we recede. We arrive at length at a point where it is no longer discoverable. We find the same law every-where reproducing itself as we read the history of man. Judgment and reason have ever been making slow but steady encroachments upon the domain of passion and impulse. But, when we reach the lowest stages of savagery, we find them wholly wanting, and again the acts of men are on the same common footing with those of animals. It is idle to talk of the moral quality of the actions of some savages—as well talk of the moral quality of those of a wolf or an hyena!

Thus much for the exceptions which exist among human beings to the rule that their acts are partly impulsive and partly rational.

There is also, I think, an important deviation from the other branch of the general statement made above, viz., that the acts of animals are altogether impulsive. The statement is only conveniently accurate. Animals certainly exercise judgment in many cases, and often reason also. In the fear that, by some confusion of terms, some of the attributes of humanity might be conferred upon the brute, men have agreed to use a different word to express the same quality in the latter. The *intelligence* of a human being is only the *sagacity* of an animal. But, if we were willing to call things by their right names, we should discover in every such act of sagacity a real exercise of intellect, either in the form of judgment, or reason, or both (vol. i, p. 502). It is unnecessary to enumerate instances in illustration of this truth; such instances are of every-day occurrence, and works on natural history abound in well-selected and well-authenticated examples.

Taking the two exceptions together, placing the lowest type of man by the side of the highest type of the brute, and we should find them to overlap a great distance, and perhaps whole nations of human beings can be found whose acts would scarcely bear a favorable comparison with those of certain species of animals in respect to the quantity of the rational element which exists to prompt them. Therefore, if we make a comprehensive survey of the whole field of action, we shall be compelled to take in the entire animated world, and we shall find that there is one universal and harmonious law pervading it.

It is the regularity of the laws of human action that furnishes the hope of sociology. One of the principal branches of social science will be that now popularly designated by the phrase "human nature," *i. e.*, a logical classification of the motives of human actions, with a view to referring all the most prominent actions which men perform to their appropriate heads. This science is already in its empirical stage, and considerable accuracy in its application has been acquired. All the dealings of man with man are based on certain intuitive predictions of how men will act under given circumstances. Still, it is only in certain of the more simple and superficial human motives that any success in this direction has been attained. For all the deeper and more involved motives, so great is the failure to penetrate them that systematic deception (vol. i, pp. 511, 578) is constantly practiced in all classes of society. A keen observer of human motives finds himself constantly surprised to see how obtuse the average mind is in allowing itself to be repeatedly duped by what ought to be transparent frauds and disguises. In fact, most human failures are really due to ignorance of the laws of human nature, and it is presumable that an acceleration of social progress will follow the reduction of these laws to a tangible science similar to that which attended the reduction of physical phenomena to laws and scientific principles. As a single example, it may be laid down as one of the more fundamental laws of human nature that, where a strong natural appetite exists, attempts to suppress it, though they may be successful in a few individual cases, will fail when applied to a large number of cases; or, though successful for short periods, they will fail in long periods. Thus, while there are no doubt many perfectly chaste abbots, monks, and other celibates, the general chastity of such large classes for long periods can not be maintained. In general, the power to resist a natural inclination is exceptional, amounting to idiosyncrasy, and will always be found to have absolute limits both in duration of time and number of attempts to effect it.

IMPULSIVE, OR SENSORI-MOTOR, ACTIONS.

The class of sensori-motor, or impulsive, actions was said in one sense to be the more natural. They are the original movements of all animated beings, and as such they must be a low order of actions. But although they follow immediately upon the physical state that produces them, and hence obey the lower promptings of appetite and passion, yet in man they often rise to an elevated plane, and appear in response to the most refined emotions and the most delicate sentiments. So true is this, that the world has been led to assign even a higher place to those acts which are said to spring from the "heart" than to those which emanate from the brain.

Yet this is a great mistake. Even those lofty as well as those refined motives, the promptings of sentiment, of love, of emotion, are representatives of that great family which are co-extensive with the existence of animated beings. They are of the primary order. The lowest animals have them in some form or other, and act in obedience to them.

This is not, however, to derogate from the true value of the emotional and the sentimental in human nature. On the contrary, when controlled by the higher power of the intellectual, they serve to throw a charm over society and over life, without which both would become intolerable. The danger never has been that of suppressing all respect for the sentimental, but rather of proscribing some forms of it while exalting others. The superficial and unphilosophic have been led to suppose that the highest morality consisted in condemning certain manifestations of human feeling which it has pleased them to denominate base, and in cultivating and extolling others springing from the same sources, and therefore no more entitled to this mark of preference.

The chief sentiments that have suffered from this policy have been love as between the sexes, anger, ambition, or love of fame, and avarice, or love of gain. So far has this been carried, that it is often difficult to find words conveying these ideas which do not imply in themselves some tinge of criminality. Of course, the reason of this lies in the fact that these happen to be the impulses which are most liable to be indulged to excess, and which, when so indulged, result in the greatest injury to those unfavorably affected. Necessarily made strong and reckless by the paramount requirements of physical existence, and through the normal operation of the law of natural selection, these sentiments have rendered themselves so obnoxious to the milder forms of conduct, growing out of higher states of culture, that, in its warfare upon their turbulent tendencies, society has seemed to lose sight of their real and normal purpose and mission, and has imbibed the notion, tacit if not avowed, that they are to be put down. But this notion, while fully as absurd, though perhaps not quite so ridiculous, as Sir Peter Laurie's proposal to "put down suicide," has, in consequence of its unsound basis, resulted in the production of a train of dangerous social evils which a rational view might have prevented.

All philosophic minds recognize in the sexual appetite and in the important derivative sentiments of which it forms the immediate basis, aside from those essential results in securing the continuance of the race and constituting the bond of the family relation, a softening and refining influence, which, if not strictly progressive, is obviously elevating to human character.

The novel and at first somewhat startling view, set forth by Professor Joseph Le Conte,* that in the last analysis, while egoistic sentiments are connected with the nutritive functions and the appetite for food, altruistic sentiments are connected with the reproductive functions and the sexual appetite, finds many confirmations in biology beyond those presented by him. The very essence and primary act of the reproductive process in all organisms, whether animal, vegetal, or protist, consists in a sacrifice. Whether in the union of the spermatozoid with the oösphere in cryptogams, of the pollen-tube with the embryonal vesicle in phænogams, or of the spermatozoön with the ovum in animals of whatever grade, there always results a complete sacrifice of both of the component organisms which lose all individual identity, and are blended and merged in a third and distinct new being, the offspring.† Higher up the scale, we meet with such phenomena as are presented by the "nurse" of the *Cercaria*, which, gradually absorbed as nutriment for the mass of young *Cercariæ* within her—as it were, devoured by them—becomes at length reduced to a mere membranous sac, which the offspring at the proper time burst through and abandon as ephemeræ escape from their exuviæ. Higher forms of the same principle are exhibited in the aphides, the several alternating generations of which may each be said to live solely for the succeeding one, as well as by bees and ants, in which the great majority are made neutral as to sex in order, as it were, to nurse the new generation. In still higher forms of animal life we see the remnant of this profoundly altruistic principle surviving in the form of a powerful maternal, and sometimes paternal, instinct which continues strong in man. In addition to this parental altruism there exists also a strong sexual altruism, which manifests itself in the disposition on the part of males to protect the females in the performance of their maternal functions and at all other times. This sentiment, well marked in many animals, as, for example, in dogs, becomes a strong and valuable influence in the human race, and is known under the name of *chivalry*.

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* "Popular Science Monthly," vol. xvi (December, 1879), p. 177.

† Haeckel, "Anthropogenie," S. 141.

A fallacy may, however, I think, be detected in the generalization of Professor Le Conte. This lies in the failure which this view makes to recognize the primary distinction, every-where insisted upon in this work, between the objects of nature and the objects of the organism. All these fundamental forms of altruistic action are unconscious and nescient, and have been the result of the laws of selection, thus working out the ends of nature—the maintenance, continuance, and improvement of life. Ethics, on the contrary, whether normal (confined to the notion of equality or justice) or supra-normal (extended to supererogatory acts, beneficent or maleficent), rests wholly upon the feelings, upon the conscious recognition of the capacity of the subject as well as the object for experiencing pleasure and pain, and therefore grows out of that branch of biology and of sociology which takes account of the objects of the organism and of human beings (vol. i, p. 216).

That the prevailing sentiment of society on the question of the purity of the actions which spring from love is essentially false and injurious, is evident from many other indications than those already noticed. The steady refusal of the popular pulse to beat in unison with moral precept respecting it may be counted among the most significant of these indices. In fact, it is very curious, and suggests the demoralizing tendency of too rigid moral standards, to observe to how great an extent the moral code is upheld in word and violated in action. Many persons, when the questions of this class arise for discussion, will defend the side of dogmatism, who at the same time are at heart in sympathy with the party of skepticism (*supra*, p. 134). The real popularity of this side, when it finds an opportunity to express itself through channels that are deemed respectable, and when its true nature is likely to remain concealed, is well shown by the manner in which works of fiction are demanded, and the stage is supported. These agencies are the natural defenders of the skeptical side of this question, which constitutes almost their only mission and *raison d'être*. They usually aim to demonstrate the essential purity of such acts, dictated by the sexual emotions, as the ethical canons declare impure. A romance or a drama which should fail to administer some such rebuke to the accepted tenets of orthodox morality would be adjudged tame, and would prove a financial failure. Every one knows with what avidity this class of critical literature is devoured by the public, and its dramatic representation is applauded. In fact, as remarked in a previous chapter (*supra*, p. 24), there exists throughout society, and perhaps always has existed, not only with respect to the class of acts here specially contemplated, but with respect to many other classes, a deep-seated rebellion against much that claims to call itself *par excellence*, moral or right—as it were, a vague consciousness, which the average intellect can not formulate, of the arbitrary, factitious character of the moral and social codes, through the shadowy form of which may be dimly seen the half-unconscious recognition that human action is the product of fixed laws for which there is no personal responsibility, that there is no absolute good or bad, but that these qualities are relative to the benefit or injury done to beings susceptible to pleasure and pain, and that the arbitrary rules of society, based on the negation of these truths, fall far short of their extravagant claims in regulating the conduct of men.

Considering, next, the sentiment of anger, it is clear that this is not by any means a useless or wholly injurious one, as seems to be popularly supposed. It has been man's great protection from lawless imposition. It operates as a check upon his other passions. In a savage state it is all that saves him from destruction, and, as he becomes more civilized, it becomes tempered with reason, and assumes the more dignified form of *indignation* for wrongs suffered, often averting and redressing them. There is no more salutary emotion than that of rational anger or "righteous indignation" for a just and sufficient cause.

Ambition, when not inordinate, is also a salutary sentiment. What can be better calculated to elevate the character than a strong desire to be highly esteemed? And there are few cases indeed, if any, where the desire is to be thought otherwise than well of. Even Herostratus probably fancied that posterity would see something daring, or in some way favorable or good, in his rash act of burning the temple. A desire to be thought well of inspires an effort to win that good opinion, and often results in great good. Men err, it is true, both in what is good and noble, and in judging of what others will deem so, yet it is rare that self-esteem and ambition fail to produce some beneficial results.

We little dream at first view of the vast benefits that accrue to society from that "love of money" which a high authority has called "the root of all evil." Without that sentiment, civilization would have been a poor thing indeed. It is the spur of all industry and commerce. Without the accumulation of wealth, there could have been no leisure for intellectual pursuits, no zeal for carrying on large business projects, and very little inducement to invention or discovery. A desire can only be gratified by the possession of the object desired. Civilization is so exclusively artificial that nearly all objects of human desire can be obtained for money. Hence money constitutes the great spur to the satisfaction of desire (vol. i, p. 494).

It is the *argumentum ex abusu* which condemns these natural impulses. Those who employ it always fail to see any thing good in that in which there is found any evil, and are unconditionally hostile to any thing which can be carried to excess. Instead of seeking to restrain passion, and to direct ambition into useful channels, to make avarice a means of stimulating industry, and to limit anger and indignation to their proper functions of protection and self-preservation, they undertake the impossible task of altering human nature by eliminating these attributes. The failure which has attended this policy has not, however, prevented the appearance of a train of serious social evils which have arisen as a direct result of a false moral sentiment.

Impulsive, or sensori-motor, actions which possess a moral quality, *i. e.*, which in any direct way produce pleasure or pain, either to others or to self, may be classed, as shown in the table, in two groups, the normal and the supra-normal. This important distinction, for the first time drawn by Mr. Spencer in his "Data of Ethics," * is explained by him in the following language: "Those of the one group achieve ends in ways that do or do not unduly interfere with the pursuits of ends by others—actions which, because of this difference, we call respectively unjust or just. Those forming the other group are of a kind which influence the states of others without directly interfering with the relations between their labors and the results, in one way or the other—actions which we speak of as beneficent or maleficent." The first part of this explanation is quite clear, since justice, which merely involves the notion of equity or equality, must consist in such acts as do not interfere with the manner in which others pursue their ends, and injustice, its opposite, must consist in such prejudicial interference; and this is why he logically places unjust actions first as representing the positive process. The second group seems to me not so happily defined. It is true that acts falling under this group have nothing to do with the "pursuits" of those affected by them. They are not reducible to the condition of interferences and non-interferences with the acts of others. Both the subdivisions of this group are positive, so far as the agent is concerned, both are designed to affect others either to their advantage or disadvantage. The term altruism, first used by Comte, has never been given the full meaning and scope of which it is logically capable. It should properly be extended to the division of maleficent as well as of beneficent actions, to the latter of which it has hitherto been exclusively restricted. It implies a voluntary effort on the part of the agent to affect the condition of others without the accompanying notion that the condition of self is thereby to be affected. In point of fact, and of necessity, some effect upon self must be produced, otherwise there could be no motive to action, and consequently no action; but this effect is a purely moral, subjective, or sympathetic one, and is not involved in, or rather is purposely kept out of, the notion conveyed by the term "altruism." And all this would be as true of the maleficent as of the beneficent character of the conception, were such an application of the word allowable.

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* Page 282.

If, now, we go back to the other group designated as "normal," and examine it from the same point of view, it will be perceived that the acts falling under it stand very clearly over against those of the second group in these important particulars. For if, in the latter group, the interest of the agent is expressly excluded, so, in the former, this interest becomes the chief consideration. It is never assumed that a person will do an unjust act unless he is to be thereby personally benefited. Interference with the "pursuits of ends" by others is never gratuitous, but is attempted in all cases because such pursuits are conceived to be in some way opposed to like pursuits by the person interfering. The object in pointing out this peculiarity is to show that, just as the actions of the second group may be generically classed as altruistic, in the enlarged sense of affecting others without affecting self, so those of the first group may with the same or greater propriety be generically classed as egoistic, *i. e.*, affecting others only for the sake of affecting self.

Impulsive, or sensori-motor, actions devoid of moral quality constitute a class, large in itself and important, but about which little need be said more than to indicate its true character. In the entire animal kingdom it is this class of action which performs the normal functions of life, in so far as these ends are not secured by automatic action. In fact, the automatic class shades off by imperceptible degrees into the conscious. This class of actions is, therefore, of more importance to biology than to sociology. In man, such actions, in addition to the simple acts which he performs as an animal organism requiring to be constantly supplied with the necessaries of physical life, embrace a large proportion of the regular and customary operations which he goes through with as a social being. His daily pursuits and labor, although a derivative class of actions very unlike those prompted by brute instincts, and although expended on artificial objects, often in the production of such objects, are nevertheless chiefly governed by a class of impulses, and not by original ideational states. This class of impulses, derived from the constant repetition of acts originally prompted by ideas, and therefore at first deliberative, though still consisting in conscious discharges from the sensorial center, and therefore not automatic, are no longer generated in the cerebral surfaces, and therefore have ceased to be ideo-motor. They must therefore be sensori-motor, though not prompted by any of the strong emotions. The actions themselves are popularly denominated *habits*, or habitual actions; and it is important to point out the economic effect of this transition from the ideational to the habitual in human actions. The cost in nerve-force of referring a perception to the sensorium is comparatively small, but the process of ideation is physiologically very expensive. This every one who works with his brain, or has observed the effect of brain-work in others, well knows; besides, it is a question which has repeatedly been made the subject of careful experiment, and always with the same result.

At the risk of some digression, it may be here added that the heaviest demands upon the brain-force are those in which the particular class of ideas sought to be generated are repugnant to the intellectual constitution of the individual who seeks to produce them. This fact has been frequently observed and remarked. The explanation which I would offer of it is, that in such cases there is in reality a conflict in the process of ideation, all the attempts of the will, *i. e.*, the prevailing desire, generally prompted by practical considerations of necessity, duty, etc., being to a large extent antagonized by opposing tendencies of the brain to produce different ideas. The actual effect is therefore only a *resultant* of these opposing tendencies. To accomplish any marked results under such circumstances, it is therefore necessary that the brain really perform a much larger amount of work, all of which costs equally to the brain-tissue and nerve-force. A similar explanation applies to "brain-worry," which is known to wear out the mind with great rapidity. It consists in an attempt to force ideation against normal antagonizing tendencies, or else to compel the cerebral processes to operate faster than they naturally tend to do.

In habitual action, the economy consists in sparing the convolutions all part whatever in the process, which is an immense saving to the whole system. This economic degradation of action may be still further continued until habitual actions are converted into automatic, of which in turn there are as many degrees as there exist ganglionic centers, ending with simple reflex action, and with each step of which process there goes a diminution of the amount of nervous drain upon the system.

DELIBERATIVE, OR IDEO-MOTOR, ACTIONS.

As we have already seen, deliberative, or ideo-motor, actions are distinguished from impulsive, or sensori-motor, ones by the fact that in them the cerebral hemispheres, or brain proper, must take part. In the process of cephalization these hemispheres, or cerebral lobes, have been gradually developed in the animal kingdom below man, but in these the principal increase of brain-mass seems to have been devoted to the object of furnishing a seat for the nerves of special sense. Nevertheless, animals certainly do possess true cerebral lobes, and these must have been developed through use and selection, from which it would be clear, were it not otherwise proved, that they do cerebrate and, in a strict sense, think. When, however, we remember that the highest anthropoids with the stature of man possess only half as much brain as the minimum amount of the rational human being (vol. i, p. 438), it becomes apparent that the extent of the true ideation possible in animals is, as compared with men, extremely small—so small that man may be practically regarded as the only living thing that can really reason.

The process of ideation, as carried on in the cortical layers in communication with each other by means of longitudinal and transverse fibers, the *fornix* and *corpus callosum*, and with the sensorium at the *thalami optici* and the *corpora striata*, has been described in a previous chapter (vol. i, pp. 378, 380), and need not be here enlarged upon. We are more especially concerned at present with the results of the process as manifested in the final motor discharge and accompanying muscular activities, which are the legitimate ends of ideas when formed.

As in impulsive, or sensori-motor, actions, so in deliberative, or ideo-motor, actions, some are calculated to affect beings endowed with feeling, and particularly human beings, in ways that occasion pleasure or pain, while others do not possess this quality. This distinction is fundamental, inasmuch as it is upon the first of these classes that the ethical code of society rests, while the second class has nothing whatever to do with ethics. It is therefore properly excluded from all works on ethics, with which, of course, no one can find any fault. To criticise moral-science writers because they fail to make their treatises embrace that class of actions which are devoid of moral quality, would only be to complain because they do not write of something else besides morals. While this would of course be absurd, there nevertheless exists good cause to complain, not to say wonder, that not only moral-science writers, but writers and thinkers in general, have failed to recognize the great class of non-moral actions and its true relations to civilization—have failed to recognize that moral actions are essentially non-progressive, while progressive actions are necessarily non-moral.

Without, however, anticipating that part of the discussion, let us now attend for a time to the opposite class of deliberative actions, viz., those which are said to possess a moral quality.

Deliberative, or Ideo-Motor, Actions possessing Moral Quality.—It has already been shown that most of the conflicts of the mind, in which the will is supposed to act and conscience to be consulted, consist of cases where two desires, one arising from the emotions and the other from the reason, yet incompatible with each other, are struggling for the mastery; and, although (so deceptive are these complicated psychological laws) it always seems as if the mind had some power to decide such contests, nevertheless, the result does nothing more than determine which was actually the stronger motive force.

It is only when an action assumes this moral quality, *i. e.*, a quality as to the agent, affecting his alleged prerogative of choice, that the idea of responsibility arises, and then the act is said to be moral or immoral according as it is right or wrong (*supra*, p. 141), rendering the agent guilty or innocent, punishable or rewardable, as the case may be. For this purpose it is generally supposed that there exists a faculty in man by which he is rendered capable of discerning what is right and distinguishing it from what is wrong. So broad a statement of the case has, however, been found to conflict with the approved distinction between right and wrong, on the one hand, and guilt and innocence, on the other.

For, if that faculty absolutely enables a person to distinguish right from wrong, he must be guilty if an act committed by him is wrong, since he must be aware that it is so. This narrow view has long prevailed, and still prevails. In all cases of crimination and recrimination, it is the chief fallacy that keeps them alive. The philosophy of it is something like this: One person has committed an act which another regards as wrong. The act was done, as all acts are, in obedience to an inclination, founded upon the view which the agent took of the case, *i. e.*, upon his *opinions*. But in the opinion of the other party it was wrong, and therefore he censures the agent, for he can not conceive how there should be any difference of opinion about what is wrong. Because he thinks an act wrong, he supposes that every body else must so regard it; that is, he regards the human conscience as an infallible monitor on all matters of right and wrong.

From this view of the subject, it is easy to see how the idea of guilt might have originated. If every one who does what any one else thinks wrong is in each case himself a wrong-doer, then even the most extreme notions of depravity are more than realized. For every one thinks he constantly sees wrong perpetrated. If all are right in this, *i. e.*, if conscience *is* an unerring guide, then is every one committing willful wrongs, and guilty, at every step of his life. He who believes this to be so, naturally considers all mankind totally depraved and deserving of punishment.

But, in the first place, we find that each one exempts himself from the rule that he applies to others. Any one may, for the sake of argument when hard pressed, admit that he is liable to do wrong, but never will he admit that he is in the wrong with reference to the particular case in question, and, as all cases are special at the time they are under consideration, this is the same thing as to claim general moral infallibility. We see, therefore, that the same rule which, when objectively applied, criminates all, when subjectively applied, exculpates all.

Again, if conscience were an infallible guide, and all men always obeyed it, not only would all be innocent, but all acts would be right. The first of these conclusions, however true it may be, would not be accepted, while the second is manifestly untrue. The truth that comes out of all these confused theories, and accords with all the facts, is, that the conscience is only a judgment of the intellect upon the rightness and wrongness of actions, and such judgments are as much more liable than other judgments to be erroneous as the subject judged is more difficult to understand. But a judgment made becomes simply an opinion, so that, when one thinks an act wrong that another thinks right, it is only a question of opinion. It is over such questions that most of the crimination and recrimination is indulged in. There is a remarkable analogy here between the history of morals and that of religion. Questions of conscience, like questions of faith, are merely questions of opinion, and in both the method has always been to blame. As, however, both are intellectual operations, and, like all other matters of opinion, depend upon the data furnished to the mind, the only possible remedy is in unifying the data.

But it is said that, in point of fact, the conscience does form an immediate and apparently spontaneous decision as to the quality of an action the moment it is presented to the faculty. If a person steals from another, or tells a falsehood, conscience does not hesitate to pronounce the act wrong. If he befriends another, or performs an unselfish act, conscience instantly declares this right, and never errs in such decisions. This is very true, yet it admits of a very simple explanation. The only true source of the moral idea is experience. In other words, this kind of idea forms no exception to the universal principle that ideas are the result of experience. In every class of phenomena there are grades of comprehensibility. There are those which readily appear to the mind, and there are those which it only grasps with an effort. Some experiences are so frequent and common that every body is acquainted with their proper interpretation as soon as old enough to form ideas. Others are so rare that great and prolonged labor is required to understand their significance.

The phenomena of gravitation form an example of the first class. Every person knows that an apple will fall to the ground as soon as he knows how to communicate an idea; and yet this is no intuition. He has seen so many examples of it that he judges instantly. If half the objects by which we are surrounded required to be restrained to prevent their rising from the ground, as they would if the relative density of the air to other objects were as great as that of water, then, before judging as to whether an object would rise or fall, one would need to know something about the object. If I hold up any object and ask a child whether it will fall if I let it go, he will probably say yes, and in almost all cases will judge correctly. Yet even in this he may err. For suppose the object to be a gas balloon, which he has never seen. As I hold it in my hand, he will decide that it will fall just as surely as if it were an apple. Yet it will rise. But, if I place an object in a trough of water midway between the top of the water and the bottom, and ask if it will sink or rise, it will require some knowledge of the object to answer. Even a grown person, unacquainted with it, would often err. It would require experience. An apple would swim, while a marble would sink. If men or rational beings inhabited the seas, gravitation would not be that simple and well-known law that it is to us who happen to occupy a rarer medium.

As an example of that class of physical truths which are difficult to comprehend, we may instance those of fluxions, or those laws which govern the rates of variation of two variable quantities, one of which is a function of the other. No one can answer the question in what ratio the increment to the solid contents of a cube will vary with a given rate of variation of a side, without not only reflection but much calculation. Other truths are difficult, from the great interval between the occurrence of the phenomena. Such is the character of many astronomical truths. We are in possession of truths to-day which we could not know had not the ancients observed and recorded the phenomena two thousand years ago. No one could judge, intuitively, of the rate of the precession of the equinoxes. This has required a long series of observations.

Between these extremes the interval is entirely filled. There are all degrees of comprehensibility in physical truths, yet they must all be first learned by experience. No truth is intuitively known (*infra*, p. 513). Moral truth is identical with physical truth in this respect. The error of moralists and of the world at large has been, that they have taken the common and obvious cases that every one learns as he does the law of gravitation as soon as old enough to think at all, and because all men agree about these and recognize the truth instantly and apparently without mental effort, they have concluded that there must exist an unerring faculty of the mind for discerning right and wrong. It would be as logical, because all men judge instantly and without reflection that a body will fall to the ground, to deduce the conclusion that man possesses a faculty which is infallible for the discernment of all physical truths. To lie, to steal, to kill, to befriend one another, to feed the hungry, clothe the naked, and house the destitute—these are but the A B C of moral science. Every body knows which of these are right and which are wrong. But this is not the whole of moral science. It is to it only what the rudiments of arithmetic are to mathematics; and there is nothing more difficult in the whole field of mathematics than is to be met with in the field of morals; no problem more abstruse or knotty, no question more complicated or profound.* Ethics really is a science, the science of one important class of human actions, and it can not be successfully studied until it is treated as such. In the great domain of human action, there are multitudes of questions which the conscience can not decide. Different consciences differ respecting them. There are moral questions about which the wisest and best of men differ—questions which are not to be settled by the act of any faculty. Such questions require study, and often, like mathematical questions, close calculation; or, like questions in physics, repeated experiment; or, like those of astronomy, observations at long intervals. Every person has met with such moral questions in his own experience. The humblest peasant in his struggles with life and the world is liable to be confronted, in his honest efforts to do right, with some moral dilemma. Suppose a day laborer, with a large family to maintain, to be out of employment and in a needy condition. Suppose an unworthy politician to offer him relief on condition that he vote and work for his elevation to some responsible trust. The question here is, "To which do I owe the greater duty—to the community, or to myself and family?" This question is clearly debatable. The moralist would tell him that his duty to the state was paramount, or that to aid a bad man to power was *wrong in the abstract*, and that it was his conscience that told him so. Nature, on the other hand, as loudly proclaims the opposite duty—self-preservation. The latter prompting is not in this case a mere impulse, and is, moreover, largely altruistic. By varying the case so as to make the man's solicitude wholly for the safety of others, both motives may be conceived as altruistic; and, by further modifying the hypothesis, cases might be conceived in which no casuist could decide on which side conscience would be found.

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* Spencer, "Data of Ethics," pp. 265, 287, 288.

Let us take another case—one of the commonest that modern society presents—a woman reduced to a state of destitution. Notwithstanding the theory of society that every woman has a male supporter and protector, this one has neither. All avenues of usefulness are closed to her. She asks for work, it is refused; for charity, it is denied. Starvation and death stare her in the face, while abundance and luxury surround her on all sides. One avenue alone remains open to her. Two alternative courses are before her—to perish, or to "sin." Against the latter she may hold out long. Nature, demanding the preservation of existence, wrestles with education, demanding obedience to the moral and conventional codes. If the former prevail, and the woman exchange her virtue for her life, society, which before had turned her from its doors, now promptly lifts its voice and pronounces her a criminal.

Most cases of this class are decided according to natural law. The instinctive love of life prevails over the codes, and Nature asserts her superiority to education. Yet there are cases of the opposite class, and in all cases there is a struggle. The true ethical questions involved in such struggles can only be answered by an appeal to the facts. Such questions are not to be answered by reference to any arbitrary moral rules or abstract principles of ethics. They are properly scientific questions, whose decision depends upon all the circumstances of each particular case. Those circumstances must be known, and the precise effect of both the prompted acts deduced from them before any one is qualified to say, This is right, or that is wrong. General rules will suffice only in the simplest cases.

To illustrate from other fields. It is a general rule that water freezes at 32° Fahr. But the case must be simple; when it becomes complex, the law fails. The water must be water and nothing else—pure oxygen and hydrogen. The air must be of a certain density and purity. Otherwise, calculations based upon it will deviate from the law. It is a general law that celestial bodies move in ellipses. But this is true only in theory. In fact, no planet or satellite moves in a perfect ellipse. The motion is complex. They not only influence one another, causing wide perturbations, but their mean path is but relative to an assumed stationary point which is their common center of gravity. But, in fact, that point is itself moving. Not allowing for such influences, the moon's orbit with reference to the earth is an ellipse, but with reference to an absolute line through space it is a curve of incalculable irregularity. So it is a general rule that theft, falsehood, adultery, etc., are immoral, but any attempt to deduce universal laws from these rules would lead us as far astray as would the assumption that all the heavenly bodies move in exact ellipses. The exceptions are too common. The circumstances are too involved. Shall Sister Simplice overstep the bounds of strict veracity just this once, and preserve good Père Madeleine from the hounds of the law? Shall he in turn save a poor worthless but innocent wretch from the galleys by making known his identity, and destroying his usefulness? These are true *casus conscientiæ*. They require something more than mere "dialectics" for their proper solution.

But the question of the conscience returns. Admit that it is imperfect; admit that it is liable to err like other human faculties. This does not prove that it is not universal. Do not all men form some judgment upon every moral action, whether that judgment be correct or incorrect? Is there not a principle of right planted in every mind, though it may often err in its application?

To this, also, a negative answer must be given. In point of fact, no one ever lived who never hesitated in the decision of a moral question. Fully one half of our acts require and receive deliberation before we are satisfied that they are right, to say nothing of the chances for that decision, after all, to be erroneous. It is only in the ordinary classes of acts that the decision is instantaneous, and then it is only because it is not the first occasion of the class. The same decision has been made a thousand times before. The judgment is all made up, written out, and stereotyped in the mind, so that it does not make an instantaneous decision at all; it only applies a decision long since made. When learned, it makes use of these moral truths in just the same manner as it does of mathematical truths. A man does not hesitate to decide a falsehood wrong or a kindness right, for the same reason that he does not hesitate to call two and two four, or ten times ten a hundred. In both cases he has to find out the truth first. It makes no difference how simple a truth is, nor in what department it is found, it must be learned before it can be known; and all those apparently spontaneous intuitions of right and wrong are precisely analogous to the apparently spontaneous applications which men make of the multiplication-table.

Let us next consider the meaning of the words *virtue* and *vice*, *guilt* and *innocence*, in connection with *reward*, *punishment*, and *responsibility*—all of which belong to a common group.

Virtue has been defined to be "the doing of right, *or* obedience to conscience." I take this definition from Dr. Wayland's "Moral Science," a standard text-book. I do not know how the two branches of that definition were intended, whether as synonymous or alternative, though the former seems more in harmony with the context. But, as "the doing of right," and "obedience to conscience," are two distinct things, so much so that they are often incompatible, as where conscience prompts a person to do what is in reality wrong, a case that often occurs, the definition in that sense stultifies itself. If taken in the alternative, it makes the word *virtue* an ambiguous term, sometimes meaning one thing and sometimes another. For, if a person intending to do wrong should mistake the effect of his act, and really do right, the act would, according to this definition, be a virtuous one. Or if, intending to do right, he should, through defective judgment, really do wrong, that act would, by the same definition, also be a virtuous one. Or, so far as the definition goes, either of these acts might constitute vice. But, of course, this author would not accept our definition of right (*supra*, pp. 140, 141), which is the utilitarian and not the accepted one, the latter being, as was shown, unscientific and really meaningless. The terms *virtue* and *vice* are also of such a loose nature that, as popularly employed, they do not admit of technical definitions. They may, however, be made useful words by confining them each to some one definite signification.

It is true that the performance of salutary and beneficial acts, without reference to the motive, is often termed virtuous, and the performance of injurious and pernicious acts, for whatever reason, is called vice. It is true, also, that the person who does what he believes to be right is called a virtuous person, and one who is thought to do what he believes to be wrong is called a vicious one (though this latter adjective is rarely applied to persons), so that in popular language the terms seem to have different meanings according as they are used of actions or of persons, approaching synonymy with *right* and *wrong* in the first case, and with *innocence* and *guilt* in the second. The latter is much nearer the true meaning, but the less we have to do with such indefinite terms the better, especially when definite ones can be found to express every phase of the subject.

The terms *guilt* and *innocence* are sufficiently definite, but unfortunately they are not exact opposites, the latter being only a *privative* of the former. The first expresses a definite quality, but the second only the absence and not the opposite of that quality. Both are subjective, and correspond with the objective qualities blamableness and laudableness, or the stronger terms punishableness and rewardableness. All of these ideas are inseparable from that of responsibility. To show how this subject has been treated, let us once more refer to the author whose definition of virtue was quoted above.

Evidently in search of the truth, he asks this question: "Is the impulse of conscience, in a morally imperfect being, the limit of moral obligation?" And he proceeds to answer it thus: "This will, I suppose, depend upon the following considerations: 1. His knowledge of the relations in which he stands. If he know not the relations in which he stands to others, and *have not the means of knowing them*, he is guiltless. If he know them, or *have the means of knowing them, and have not improved these means*, he is guilty. 2. His guilt will depend on the *cause* of this imperfection of his conscience. Were this imperfection of conscience not the result of his own act, he would be guiltless. But, in just so far as it is the *result of his own conduct*, he is responsible. And, inasmuch as imperfection of conscience or diminution of moral capacity can result from nothing but voluntary transgression, I suppose he must be answerable for the whole amount of that imperfection."

The above citation may probably be taken as a fair sample of the views of the school of theologico-moral writers.

According to this doctrine, the *guiltfulness* of an action depends, first, upon the knowledge which the agent has of the relations in which he stands to those affected by the action; in other words, his guilt depends upon whether he knows that it will injure others, *i. e.*, whether he knows it to be wrong. So far this is all very well, with this oversight, that as far as his guilt is concerned it must in all reason be the same if he believed it wrong, though it were not, as if he believed it wrong and it were wrong. So that, to have been consistent, he should have used the word *believe*, *suppose*, or *think*, in the place of "know." He then goes on to say that if he does not know, and has had no means of knowing, that the act is wrong, he is innocent, which is certainly reasonable. Neither is there any particular objection to the next point, that, if he does know, he is guilty. As far as the idea of guilt at all is admissible, this must be true, even if he only and erroneously thought the act to be wrong. But what shall we say of the proposition that, if he do not know the act to be wrong, yet because he had had the means of learning this, which for any reason he had not improved, he is to be held guilty? In the first place, it is in direct contradiction of the first principle of morals held by the same writer,* that "the quality lies in the intention." For, if he did not know the act to be wrong, no matter why, he certainly could not intend to do wrong in committing it. Nothing could be clearer than this. In the second place, it seems like prejudging a case against a person, to tell him that he is not only responsible for that which he knew better than to do, but also for that which he would have known better than to do if he had taken the pains to find out. Besides, the doctrine is complicated, vague, and indefinite. Important questions of the most intricate character are necessarily involved in it. What constitutes having the means of knowing a thing? Can any one be said to have such means, after all the qualifications have been allowed, if he in fact does not know it? For among those qualifications is included that of disinclination to investigate. And if only certain qualifications are allowable, which are they? What deterring influences are to be counted and what ones rejected? Suppose the means of knowing were in a book, but the person has not learned to read books. He may have had an opportunity to learn to read, but for some reason has chosen to devote all his time to something else. Perhaps he was poor, and has been compelled to labor so as to have neglected his education. He may have been so situated that by making a certain sacrifice he might have learned to read, but chose not to do so. Or, suppose he could read, but instead of reading that particular book, he has chosen to read some other, and thus, having the means, yet has not acquainted himself with the facts which would have governed his conduct. Or, suppose some one with whom he was daily associated, possessed the information, but he had never thought or seen fit to make the necessary inquiries. Or even suppose he had been told this truth or had read it in some book, but had, from any cause, constitutional or other, failed to give it credence, or failed to understand it, or had misunderstood it, or, understanding and believing it, had afterward, from contradictory reports or from his own reflections, withdrawn his belief. In which of all these cases, or of an infinite number of others having every degree and shade of connection with the act, yet all insufficient to restrain its commission, is he to be held innocent, and in which guilty? Where is the line to be drawn?

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* *Loc. cit.*, p. 33.

But we will pass on to the second doctrine, that of responsibility for the imperfection of conscience. It will be seen that Dr. Wayland makes a clean sweep of his own previous qualification, and declares finally that all men are guilty of all wrong acts committed in consequence of possessing an imperfect conscience. His reason for this is, that all diminution of moral capacity can result from nothing but voluntary transgression. This, of course, flows from the assumption that the so-called moral sense is originally perfect in every human being.

As we have already considered this moral sense, and been able to see nothing in it except an intellectual judgment respecting right and wrong, it will only be necessary to remark here that there is clearly no reason why a person should not as well be held responsible for the imperfection of his reason or his memory as for that of his conscience.

It is scarcely necessary to add that the utilitarian philosophy sweeps away all this worthless casuistry. Consistently held, it rejects the notion of moral responsibility, and advocates the adjustment of the circumstances by which men are surrounded in such a manner as to cause the performance of right actions rather than the punishment of wrong ones which can not be undone. If wrong has been done, there must have been a cause in the nature of things. The general cause of wrong acts of the deliberative class is ignorance, or its aggravated form, error, and the corresponding general remedy for this will be considered in Chapters XIII and XIV.

The experiment of deterring from immoral conduct by threats of future punishment has failed, as proved by the admission of those who adopt that method that the general morality of the world does not improve. This, it is true, science does not grant, but ascribes the real improvement that has taken place to entirely different causes (*infra*, p. 507); yet it does maintain that the theory of punishment, and of rewards also, exerts a more or less demoralizing influence, since the end of action is thereby shifted from that of doing right and avoiding wrong to that of obtaining reward and escaping punishment, which are by no means identical ends. The chief wrongs emanate from the head and not from the heart, and the task of making men do what they think is right is a far less important one than that of enabling them to see wherein the right lies. The surest moral guide, therefore, is a knowledge of the relations which each individual sustains to his fellows, to society, and to the world in general (*infra*, p. 495).

It follows from what has been said that what are called moral culture and moral education are matters of minor concern. The real moral education is intellectual education, the education of information (*infra*, p. 568).

The sword of education is two-edged; it so molds the mind and constitution, on the one hand, as to render the rational desires supreme over the impulsive, and, on the other hand, it teaches what right consists in. It is education that forms opinions; these beget volitions, and these in turn inspire actions; so that if the education be sound the actions will be moral. All men do, as a general rule, what they consider for the best. In a state of nature they are governed mainly by impulse. They are so governed, in a great measure, even in civilized life. But such acts are confined to the gratification of the immediate demands of the body. They are an insignificant class. Most actions which greatly affect the happiness of others belong to the rational class. In these all men consult the greatest good. They often fail to attain that end because short-sighted. Ethical questions are too difficult for them. But they are entitled to the credit of seeking that object. Even if they seek their own interest at the expense of that of others, it is because, in their minds and with their narrow understanding, they allow the interests of all the world to be swallowed up in their own. It is still the greatest good as they understand it. The two primary questions, therefore, are: 1. What will be the effect of a given act? and, 2. How shall it be made apparent? These problems properly belong to the other general subdivision of deliberative actions, where they will be considered.

Returning to the subject of responsibility, we find that but little remains to be said. The principles involved may be summed up in a few sentences. There is no such thing as a sense of guilt. Every deliberative act is justified at the time committed. All supposed guilt can be accounted for on one or other of the three following principles:

1. Men think others guilty because they do what *they* (*illi*) think wrong.
2. Men think themselves guilty of acts which they *afterward* see to have been wrong.
3. Men mistake fear of punishment for remorse of conscience.

The first of these classes is by far the largest. Nearly all that is pronounced wrong is so regarded simply because the party judging differs in opinion from the party performing the act. The probability of the act being right is in the long run equal to that of its being wrong, and the agent in each case fully justifies his conduct. All that is required in such cases is simply to know on which side the right lies.

The second class is by no means rare. Remorse is nothing more than a disagreeable state of mind arising out of the subsequent discovering of the injurious effect of an act, coupled with the mistaken impression that it could have been prevented. If the act was a deliberate one, the party simply forgets the circumstances surrounding it, and the state of mind existing at the time of its commission. He sees now so plainly that it was wrong, that he supposes he must have known this at that time, when in reality he then took the opposite view.

I do not say that no one ever does what he believes to be wrong. This would be too broad. It needs to be qualified, and the qualification required is to restrict it to cases of *rational* actions. If a person ever commits an act which he himself believes at the time to be wrong, it is because his impulses are stronger than his reason, and override it. The act is of the impulsive class, while the opposite act of refraining is of the rational class. But the impulse is stronger than the reason, and it must triumph. To regret such an act is to "cry for spilled milk." To blame one's self or another for such actions is the height of folly. It is far better to set about the work of strengthening the rational powers so that they may hold the passions in check in future.

But, where the act committed is a deliberative act as well as the act of refraining from its commission, in such a case, the rule holds good that a person never performs it if at the time he believes it to be wrong. I am aware that this will be generally questioned. But it is because of the difficulty in agreeing about what constitutes a sense of wrong-doing. Few will admit that, where one person deliberately cheats another out of money, he believes he is doing right. It is true that he knows he is not doing what the moral code pronounces right. But it will always be found that he has some special reason for self-justification. The very fact that it is for his own interest is sufficient to make it right to him. For with him the greatest good to himself is the paramount motive. He is not capable of weighing properly the arguments which urge him to desist. Any reason which favors self has a tenfold power, and finds a justification in the least consideration. He therefore just as much believes it for the best as though the action were in reality a praiseworthy one. Let any one who disputes this in his mind seek to recall acts of his own, and he will probably have no difficulty, if candid in his purpose, in recollecting many that he has himself performed which he knew were contrary to the general rules of society, and which he knew society would condemn if they were made public, yet he thought them right at the time, and perhaps still thinks so—acts that he had his own private reasons for believing right, and for which he fully justified himself against all the world. Now, because he happens to change his mind afterward, this does not in the least alter the case. Nor does it alter the case because he forgets what his state of mind was, or fails to realize what those private interior considerations were that decided the act. It is the fact that, in such cases, men generally do fail to reproduce exactly all internal and external circumstances that influenced them to perform an action which they afterward think they see to have been wrong, that gives rise to all cases of regret and remorse, except those where the act was the result of a momentary impulse of impassioned desire, as before described. And this is all there is of remorse. In either case it is unphilosophical, and a proper understanding of its psychological origin and nature will go far to diminish its influence, and may eventually eliminate it altogether.

The third case, viz., where men mistake fear of punishment for conscience, arises in the following manner: They mistake the fear which they entertain of the penalties of positive law for the compunctions of conscience. They have been educated to respect and obey this law, and have even been taught that the object of law is to "command what is right and prohibit what is wrong." * This reverence for law has been thoroughly kneaded into their constitutions by a series of generations of education in a particular direction, until their private judgment and mental independence have nearly disappeared, and they have almost come to believe that what the "powers that be" have ordained as law must be right at all events. They therefore so reverence human law that, though they involuntarily disobey its arbitrary requirements where they conflict with their judgment and intuitive sense of duty, yet when brought to trial before its august tribunals, their hereditary respect for law often

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* Blackstone, "Commentaries," p. 44.

returns, and they are ready to confess themselves guilty for what they had deemed obedience to the dictates of their consciences.

The history of the life, character, conduct, and execution of Lady Jane Grey affords a fine illustration of this point. History acquits her of all guilt, and places her among the innocent victims of political and religious persecution; yet, strange to say, she confesses her guilt on the scaffold, and acknowledges that death is the least penalty that she ought to expect from an injured state. Yet no one supposes that she deemed herself guilty at the time of committing the acts for which her life was demanded.

As a form of guilt, *crime* deserves a separate consideration. I could not discuss it with that detail which its importance demands without exceeding the limits of the present chapter, but will venture a very few remarks of a fundamental character, for the purpose of showing how the views already expressed on the subject of human actions apply to this particular class.

An action becomes criminal whenever it rises to the importance of a public injury. The history of criminal law shows us that the boundary-line separating the social from the civil code has advanced with the degree of civilization, so as to bring many acts formerly belonging to the domain of the former under that of the latter. The time has been within the historic period when nations only punished such crimes as treason, rebellion, and other attempts upon the life of the state. They did not recognize murder and robbery as crimes against the state, and therefore left them to be redressed by the injured parties. The present theory of criminal law is that all acts denominated crimes are in the nature of attacks upon the state—upon the social order. Crimes being actions are, of course, divisible into the two great classes, impulsive and deliberative. They arise out of desires based upon either a physical or a mental state. Hence their object is always the satisfaction of desire. They therefore differ from other immoral acts only in the degree of their evil effects, and in their tangibility, or capability of being punished or prevented. Like all other acts, crimes are the necessary consequences of the particular circumstances that produce them. The theory and practice, therefore, of punishment for crime are unsound. But, it may be asked, what shall be done? Shall we permit crime to go unpunished and to flourish? Does not the greater part of society agree as to what constitutes crime in most cases, and shall it not be allowed to take measures to prevent it? Certainly. But prevention and punishment are different things.

All sound jurists now agree that the prevention of crime should be the sole object of criminal proceedings. The most effective means of accomplishing this object would be self-protecting laws in the nature of equalizing rights, but ultimately this might be supplemented or even wholly superseded by *attractive* measures (vol. i, p. 39). The supreme preventive of crime is, of course, general intelligence, which, as will be shown in Chapter XIV, can only be secured by some such system of diffusing knowledge as is sketched in that chapter. But, even if such a system were adopted, there would be a long transition period during which crime would require to be checked. This could be accomplished by protective regulations, humane and philosophical in character, but rigidly enforced.

The mode of protecting society need not differ very greatly from that now practiced. The spirit should, however, be very different. Confinement is probably the most salutary means of preventing crime, but it should aim only to prevent future crime, and not to inflict punishment for past crime. The former of these objects it already admirably accomplishes by restricting the offender to localities where he can not do what his imperfect nature prompts him to do. But, as now employed in most places, it fails to secure the manifestly paramount object, viz., the reformation of the criminal.

The treatment of criminals ought to be made as much a science as the treatment of diseases. Crimes are the diseases of society. They are, however, mental in character, and a place of confinement for criminals should be arranged with special reference to the pathological treatment of their disordered minds, *i. e.*, adapted to effect their reform. Neither should the body of the criminal be neglected, much less abused, since the *mens sana* can only properly exist in *corpore sano*. But, as crime is usually due to either ignorance or error—*i. e.*, either to the want of such general acquaintance with the relations which the criminal sustains to society and to the world at large as would, if understood, have rendered its commission impossible, or else to false ideas respecting those relations—it would seem that no higher purpose could be subserved by imprisonment than to make it a means of supplying the criminal with information respecting such relations, and of disabusing his mind of the false impressions entertained with regard to them. In other words, the same agencies might be employed in the moral reformation of individuals as have availed to secure whatever moral reformation has taken place in society at large (*infra*, p. 507).

The subdivisions of the class of deliberative actions possessing a moral quality are the same as those of the corresponding class of impulsive actions. They may be normal or egoistic (just or unjust), or they may be supra-normal or altruistic (beneficent or maleficent). Nearly all that was said respecting this classification of actions when considering the simpler class will apply equally to the more complex class, and need not be repeated. Very little need be said in addition as applicable only to deliberative actions, since the greater part of that which might here be introduced has already been more conveniently embraced in the foregoing discussion of the nature of deliberative actions in general.

Relative to the first class, the necessity above referred to for the maintenance of an equality in the power which each individual can exert in society constitutes the most important consideration in the entire domain of justice and law. A recognition of the fundamental law of human nature—the egoistic character of human actions—furnishes the only real argument in favor of democracy. It shows why it is that in matters of legal rights or political influence, Bentham's dictum, "everybody to count for one, nobody for more than one," should apply. There is no doubt that some persons are more important to society than others, but, however great that difference may be, in all questions affecting human rights—questions of justice and injustice—the power of one should not be in the least greater than that of another. The governments of the world are all based upon the virtual if not the avowed principle that certain persons should have more rights than others because they are more important to society. Men of rank undoubtedly think, though they may have the modesty never to say, that they are more important than persons of low birth, and they infer that they ought to have more power. To most persons this claim would probably be regarded as reasonable. Men of wealth reason in a similar manner, and many think their position sound. Men of learning do the same, and, if the inference is true in any case, it certainly should be in theirs. But, while rank and wealth invariably do bring increased power, learning rarely does so.

Now, rank, wealth, learning, or any other true superiority ought to exert, and must exert, an influence corresponding to its degree, but from the ethical point of view it should exert no influence whatever in the domain of human rights. The least influence exerted in this field beyond numerical strength tends to increase the advantages of the possessor for pursuing happiness at the expense of those not thus privileged, correspondingly diminishing the advantages of the latter for pursuing happiness. It is not rank, or wealth, or learning that society exists for, but happiness, to which all other things are only the means. Considering the great preponderance of those not possessing these gifts, it is evident that the happiness of the masses is the great end to be sought, and not that of a few who possess wealth, power, or genius.* If it would contribute to that end, society should not hesitate to sacrifice these few. But, as it manifestly would not, it can certainly deny them the power to commute the welfare of the mass into the privileged exercise of authority by a mere handful. To illustrate in how great disproportion these numerically insignificant classes have been estimated, it will only be necessary to consider the part which they have played in literature and history. The advance from monarchism to democracy has already caused the historic worship of ruling houses to be appropriately characterized. But in literature man-worship still prevails. Genius, or talent, is alone deemed worthy of mention. Mediocrity, which must always embrace the great mass, is systematically ignored. While every thing is done to make brilliant stars more brilliant, no attempt is made to improve the immensely greater number of lesser lights. It will be a long time before the world will recognize the fundamental truth that it is not to apotheosize a few exceptional intellects, but to render the great proletariat comfortable, that true civilization should aim.†

To the group of supra-normal, or altruistic, actions would properly belong a discussion of the claims of disinterested action. This object has, however, been partially accomplished in a previous part of this chapter, and the whole subject has been so ably treated by Mr. Herbert Spencer, in his "Data of Ethics," ‡ that nothing, it would seem, remains to be said.

The egoistic basis of altruism is the great moral paradox. All actions emanate from feelings of some kind, and these must all agree in having pleasure for their end. In their ultimate analysis, therefore, all actions spring from the same motive. The real distinction between egoism and altruism must be looked for at a later stage in the development of motives. In all the lower and commoner motives, the feelings constituting them are what may be called simple, or direct. The pleasure which is to flow from action begins and ends with self. But a class of feelings has been developed by social progress which are more complicated, and may be called indirect. They are collectively denominated "sympathy." These feelings only arise when the direct feelings of others are affected. Pain in others produces pain in self. This pain is a real feeling, although belonging to the "faint series." It is purely subjective, *i. e.*, due to nervous changes set up in the body without the customary moving cause of sensations produced by contact with objects at the periphery. The moving cause in sympathy is a cognition, or idea. The cortical layers here, as in many other analogies, perform the office of external nerves. Discharges propagated to certain parts of the body produce a similar effect when generated in the brain as when generated at the extremities or on the surface of the body. Psychological science, based on the study of the brain and nervous system ("estho-physiology"), will doubtless throw much more light upon the precise nature of sympathy as a psychological and physiological phenomenon, but its general character is as here described. It is certainly a fact that the recognition of suffering in others is attended, to different degrees in different individuals, and in very close proportion to the grade of physical and mental organization, with a corresponding painful sensation. It is upon this unquestionable truth that the egoistic quality of so-called altruistic actions rests.

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* Spencer, "Study of Sociology," p. 255.

† "Philosophie Positive," vol. iv, p. 389; vol. vi, pp. 83, 161.

‡ Chapters xi and xii.

It seems to be a characteristic of the human mind to exalt the sentiments belonging to the faint series at the expense of those belonging to the vivid series. This is doubtless because it is perceived that such sentiments increase in power with the advancement of the race and the development of the mind. They belong only in a very limited degree to the animal races, and savages are for the most part devoid of them, while they are strongest in the highest types of manhood. Hence, it is quite naturally inferred that they must be something higher, more spiritual, and purer than the direct sentiments of the vivid series. In the last chapter, this tendency was pointed out with respect to such sentiments as hope and anticipation (*supra*, p. 283). The general law governing that case is applicable to sympathy. It seems almost to be forgotten, notwithstanding the etymology of the name, that sympathy is a feeling at all, and many will reject, with a sentiment akin to indignation, the proposition that benevolent and philanthropic actions are prompted, like others, by the motive of diminishing disagreeable feelings experienced by those who perform them—of diminishing the force of sympathy which is becoming unbearable.* Yet such is undoubtedly the scientific explanation. It is, in fact, the only one possible, since the popular idea that such acts are performed without any personal interest on the part of the agent is equivalent to saying that they are performed without any motive—effects without a cause. This view, however, should by no means detract from the moral superiority of such actions, for egoistic actions may differ, in this respect, in all conceivable degrees.

What was said of the sentiments of hope and anticipation will apply equally well to that of sympathy, or altruism—that they are legitimate and safe only within certain limits, beyond which they become, in a certain sense, derangements, or at least a morbid condition of the mind, carefully to be avoided. This hyperesthetic condition is, moreover, easily rendered chronic, and a state produced, by voluntarily dwelling upon scenes of suffering, in which sympathy becomes stronger than real pain, and renders life a burden. Neither is there any direct relation between true intellectual superiority and the capacity for sympathy. On the contrary, it is found that the most sympathetic persons are those of rather inferior reasoning powers; and women, who are confessedly less rationalistic, are, as a rule, more sympathetic than men. Much of this may be due to education enforcing the overstrained position that altruistic are so far superior to egoistic sentiments that the latter ought to be neglected. True intellectual superiority perceives the fallacy in this, and suppresses the tendency to the undue nurture of the sympathies, while mediocrity lives up to the false standard. The apparent antithesis between the rational and the sympathetic is in this way brought about as we find it in society.

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* There is a certain *luxury of altruism* in which some persons indulge to the verge of dissipation. Such persons seem never to be happy except in the midst of suffering, striving to mitigate it. They expect their reward in praise for their disinterestedness and their so-called sacrifices, when they are really pursuing the only course that yields them any pleasure. This is sometimes carried so far that it can not be doubted that misfortunes brought upon others to whom they are permitted to minister are welcomed with a certain secret joy, to which they of course would not confess. The real evil thus occasioned is in the tendency of this morbid sentiment to withdraw such people from the wholesome egoistic pursuits which nature properly demands of them.

We have in the word *sympathy* a term representing the altruistic sentiments as subjective feelings. No corresponding term exists for the egoistic sentiments. The word *autopathy*, could it be adopted in this sense, would doubtless be found useful. Better still to convey the altruistic conception, and in more natural contrast with autopathy, there might in like manner be substituted for sympathy the allied expression *altropathy*, which, to a certain extent, would come to the aid of the stronger term philanthropy.

Before passing entirely from this last and principal class of strictly moral actions, it may be remarked in general that their importance, considered as the subject of instruction and a part of education, has been vastly overestimated. Considered in itself, there can, of course, be no greater *desideratum* than that of upright conduct among men, but no truly rational theory of what upright conduct consists in has ever been proposed, while the attempts that have been made to enforce arbitrary moral rules have failed entirely to secure any improvement in natural morals. Whatever improvement has taken place has been due to the progress of knowledge and to intellectual development. This becomes perfectly intelligible when it is recognized that what has been worshiped as the conscience is simply an intellectual act—an act of the judgment; and it becomes clear that what is needed in order to improve human conduct is simply to strengthen this faculty.

The necessity for any code of ethical rules whatever is also seen to exist only in the imagination, since, while actions must conform to definite laws which may and should be carefully studied and thoroughly understood, these laws, or rules, are merely the embodiments of ethical facts, and therefore self-enforcing. Any human rule made in opposition to these laws is as incapable of enforcement as the pope's bull against the comet, while human rules in harmony with them do not in the least facilitate or affect their normal operation. Not but that the pure science of conduct has its corresponding applied stage, but as a science this must consist in something more than the empirical therapeutics thus far practiced in the field of moral pathology. The basis of the real science and art of human action still remains to be considered.

It should also be remarked, as a closing thought upon this general branch of our subject, that the moral code which we have constitutes an integral part of our social development, and is essential to it. Much sentimentality is indulged in with respect to the essential nobility of moral conduct, and the general tenor of this is to give the credit for such conduct entirely to the individual. This is a very narrow and mistaken view. Ethical principles are a growth of the social system. The members of society are literally bound by them, not by an ideal bond, but by positive constraint. The prevailing idea is, that any one might conduct himself immorally if he preferred, and that pure *principle* is all that prevents the majority of mankind from doing so. Such ideas legitimately follow from the free-will doctrine and other kindred errors that pervade the moral teaching which we all receive. The truth is, that men are compelled to conduct themselves according to the established standards of propriety. This is the condition upon which society has been enabled to develop. The few who attempt to break over these restrictions quickly come to grief. They drop into the criminal classes, and find their way into the penitentiaries; or they are stamped as monomaniacs, fanatics, "cranks," and rigidly guarded. They are driven from the centers of culture, and find for brief periods the means of continuing their licentious course on the expanding borders of civilization. Here they are known as "roughs" and "desperadoes," and flourish until compelled to succumb to the summary justice of "vigilance committees," which are merely the rude guardians of moral law in such communities. For there is really no hard-and-fast line which can be drawn between criminality and the less heinous forms of immorality. But even the least deviation from the path of rectitude is, in developed social centers, a signal for ostracism, the withdrawal of esteem, systematic avoidance, and all the other forms of punishment which render life intolerable, and demonstrate the completely compulsory character of the ethical code. It is a code which enforces itself, and therefore requires no priesthood and no manual. And strangely enough, here, where alone *laissez faire* is sound doctrine, we find the *laissez faire* school calling loudly for "regulation."

It is only by the aid of this comprehensive view of ethics, or the science of conduct, that we can duly appreciate the nature and value of dynamic action, or social dynamics—the science of social progress.

Deliberative, or Ideo-Motor, Actions devoid of Moral Quality.—Mr. Spencer regards "conduct" as embracing the same territory which is here covered by voluntary actions, and classifies it under the three heads, "good," "bad," and "indifferent." Good and bad conduct are of course commensurate with what are here classed as actions possessing a moral quality. To explain what he means by indifferent conduct, he says: "A large part of ordinary conduct is indifferent. Shall I walk to the water-fall to-day? or shall I ramble along the sea-shore? Here the ends are ethically indifferent. If I go to the water-fall, shall I go over the moor, or take the path through the wood? Here the means are ethically indifferent. And from hour to hour most of the things we do are not to be judged as either good or bad in respect of their ends or means." With these and a few more brief comments he dismisses the subject of indifferent conduct.

Considering the point of view from which the "Data of Ethics" proceeds, which, notwithstanding the revolution which his friends claim that this work is to produce in the entire system of morals, is the point of view from which all previous works on ethics have proceeded, this passing notice of indifferent actions was all that was demanded or required.

From the point of view from which this chapter proceeds, it is not until this group is reached that the proper subject of the chapter can be said to have been entered upon. For, although in the systematic treatment of each of the other classes of actions, and particularly of the class last considered, much more space has been occupied than is left or required for the adequate appreciation of the present one, still this has been rather in the nature of a preparation for the remarks which follow, than an attempt to treat the subject of ethics in a systematic way. Before it was possible intelligibly to treat the class of actions devoid of direct moral attributes, it was necessary to differentiate them clearly from those possessing such attributes, which, in the present state of moral science, required some consideration of this latter class from this unaccustomed stand-point.

The class of non-moral actions, as shown in the table, falls into two groups, the first of which we have called static, and the second dynamic. Actions belonging to the statical group have no tendency to change the existing status of society. They may be further subdivided into two divisions, one of which embraces such acts as those of going to the water-fall or the sea-side—actions not only ethically but in all other respects indifferent. The other division embraces a large class of useful acts tending to preserve the existing social status. What was said of that class of impulsive actions which are devoid of moral quality may, without qualification, be transferred to this division of deliberative actions. The great preservative agencies of society, the daily pursuit of subsistence, of pleasure, of wealth, etc., fall within this definition. Notwithstanding their importance, such actions leave the world where they find it, or if, by virtue of accumulations, they add to the social structure, it is not to them, but to some improved method or ingenious principle, according to which they operate, itself the result of a different kind of action, that this increase has been rendered possible. The mere journeyman at a machine performs only a statical service, although, by virtue of the machine, he may be able to accomplish a hundred-fold more of the same grade and kind of work than if required to do it by hand. It is not to his action that this increase is to be attributed, but to that of him who discovered the laws of nature by which the machine operates, and devised the apparatus to utilize those laws.

Yet we find that, even in this comparatively unimportant group of ethically indifferent actions, immense labors are performed, and vast results accomplished, which increase in proportion as the functions of social life become extended and diversified. Comte maintained that the human intellect was so constituted that it must always be true that the great bulk of mankind would be confined to labors of this purely ministerial kind. He distinguished the two classes of workers as "active" and "speculative," and remarks that "presque tous les hommes sont, par leur nature, éminemment impropres au travail intellectuel, et voués essentiellement à une activité matérielle ; en sorte que l'état spéculatif, de plus en plus indispensable, ne peut être convenablement produit et surtout maintenu chez eux que d'après une puissante impulsion hétérogène, sans cesse entretenue par des penchants moins élevés mais plus énergiques." * But it may reasonably be asked whether long and continuous habituation may not extend the "speculative" faculty to the greater part of mankind.

DYNAMIC ACTIONS.

The distinction between conduct and action is not rendered complete by the exclusion from the former of mere "purposeless," or involuntary, actions. In fact, as already shown, these should properly be excluded also from the class of actions proper, so long as they are conceived as performed by conscious beings, involuntary actions being only entitled to that name in the sense in which it is applied to inanimate objects, as machines, etc. The term "conduct" is itself rarely applied to ethically indifferent actions, and, when it is so applied, it is much in the same metaphorical way in which it is sometimes applied, along with its close synonym, "behavior," to inanimate objects. The insignificant division of ethically indifferent actions from which Mr. Spencer draws his illustrations is about the only one to which the term "conduct" can be applied. For the much larger and more important group of statically conservative actions, such a use of the word is not admissible; neither will it apply with any propriety to dynamic actions. Yet the greater part of all human action is concentrated upon the two great ends of maintaining the *status quo* and of producing a change for the better—of preserving social order, or of effecting social progress.

The great object of action is to *do* something. Conduct only aims to *avoid doing*—either to avoid interfering with the "pursuits of ends" by others, or to prevent others from pursuing such ends, or to do some benefit for another, whereby he is prevented from doing the necessary acts for rendering an equivalent, or to do him an injury whereby he is prevented, to that extent, from pursuing his natural ends. It is all through a negative proceeding, interfering at every point with the normal course of action. Conduct is a *guidance* of acts so as to prevent or to occasion conflicts in normal actions. The complicated condition of society has rendered it necessary that an entire class of actions should exist whose sole object is to deal with such conflicts. The aim of good, or moral, conduct is so to bend the course of normal action as to avoid all conflict with the normal action of others. The aim of bad, or immoral, conduct is so to steer one's course as to produce jars and collisions in the normal pursuits of ends by others. The pathological state of society to which all moral considerations are directed is the consequence of this complicated net-work of human pursuits, which, in the nature of things, must frequently clash. The "pure morals" of Kant and the "absolute ethics" of Spencer can never be fully realized, and can only be approximately realized through a complete *organization of human action*. The wholly unorganized, independent, and sporadic character of human pursuits—of the normal actions of men—at the present time, is the cause of the constant conflict of interests in society, and is that which causes a moral quality to exist. Moral conduct, though necessary to prevent worse evils, is in itself a serious evil. Every departure from the direction of the propelling force of an action is made at the expense of the results accomplished (vol. i, p. 39). The deviations necessary to be made from the normal line of action in order to avoid conflict with the interests of others tell heavily against success in achieving the cherished aims of life.

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* "Philosophie Positive," vol. iv, p. 389.

Moral conduct, instead of being, as usually represented, conduct in a right line, is in reality conduct in a very irregular line. The path of *rectitude* is a crooked path, and the distance lost in following it counts heavily against the progress of the world, yet less heavily than would the jars and collisions which a failure to follow it would inevitably produce.

The remarkable fact to be noted is, that it is this class of human action, aiming simply to avoid such conflicts of interest, insignificant as it is in comparison with the main current of human action, that has been the subject of all the ethical teaching and ethical writing which have flooded the world from the earliest historic periods. Proceeding, however, as this great ethical movement has, upon the direct method, its success has been only temporary and local, and no true monument of its results exists, from the summit of which, as from a new vantage-ground, a fresh movement can be commenced, enriched with the accumulated experiences of the past. At this late day we still find ourselves at the foot of the ladder, and must begin, if at all, where Confucius and Menu began.

Dynamical actions are distinguished from statical actions in proceeding according to the indirect, or intellectual, method of conation instead of the direct, or physical, method. All actions consist in efforts to attain desired ends. In all, the end is present to the mind before the action is attempted. In statical actions the movements of the agent are made in straight lines toward the end. In dynamical actions they are not so made, but may proceed in any other direction. In statical actions the end is sought *immediately*. Nothing intervenes between the act and the end, between the agent and the object. In dynamical actions ends are sought *mediately*. There intervenes between the action and the end a third something which is called a *means*.

All actions, whether statical or dynamic, consist in certain voluntary muscular movements executed by the agent in response to motor discharges from the supreme nervous center. In statical actions (which may be either ideo-motor or sensori-motor), these muscular movements proceed, as already remarked, in the direction of an immediate end in view. In dynamical actions, these muscular movements are directed toward other objects in such a manner as to make these latter serve as mechanical aids in securing remote and perhaps invisible ends. These intermediate objects, constituting the means to the remote end, are at hand, and may be adjusted in any desired relations to one another and to the agent and the object sought. These objects possess various properties peculiar to themselves. They are also related in special ways to other objects by which they are surrounded, and to the various natural forces manifest every-where, whether physical, vital, psychical, or social. All objects on the surface of the earth, though supposed to consist of multitudes of molecules which are moving among themselves, and though known to be undergoing secular changes, and destined to manifest, sooner or later, wholly different forms without human agency, may nevertheless, so far as man's daily dealings with them are concerned, be regarded as in a state of repose or inertia. The forces of gravitation and chemical reaction have reduced them to a state of equilibrium. Though differing immensely in properties, in form, size, consistency, etc., they are most of them in so far tangible that they allow their relations to be changed at the hands of man. In short, they neither escape him, nor resist him, nor refuse to be subdivided, modified in form, or transported in space. Before the active efforts of man the materials of nature are wholly passive. The condition which they have naturally assumed is the statical one. The free forces of nature have already played upon them in antecedent dynamic states until they have at last been reduced to their present state. This is the one in which they are capable of producing the least effects upon surrounding objects. While their matter has been integrated their motion has been dissipated, until the matter and force of the universe—at least, of the part of it which man occupies—have, as it were, become separated or divorced, and exist and manifest themselves independently—such is the apparent, and, so far as human action is concerned, the practical condition.

Now, it would be reasonable to suppose that, since natural objects have been constantly borne down until they have been brought to assume the greatest degree of stability of which they are capable in the existing condition of the universe, any attempt to disturb that condition would remove them more or less from that stable state and render them less inert and less indifferent to the influences of the free forces still playing upon them. Such is, in fact, the case, and it is an indisputable truth that the great results achieved by man in operating upon the material objects of the earth have consisted in removing these objects from the still folds of material death in which he has found them, and so placing them that the surrounding influences which had consigned them to this state can again set up changes in them and, as it were, reanimate them. In scientific phrase, it is by the transfer of material objects from the statical to the dynamical state, from a condition of molar equilibrium to one of molar activity, that human civilization has been enabled to originate and to advance.

But this is a work which mere vital or social forces would never know how to undertake. It is only under the guidance of the intellectual faculty that the first step in this direction can be taken. The means necessary to be employed differ so widely from the ends that intellectual foresight can alone insure their adoption even in the simplest cases. The acts really required are so wholly unlike those which would be required if the end were directly sought, that a highly developed rational faculty is demanded in all beings that are capable of performing them. When a being, endowed with desires to be satisfied, is made acquainted with the existence of a desirable object, it is immediately prompted to move, or to put forth efforts, in the direction of that object. To such a being, another, desiring the same object, that should turn away from it and commence making adjustments in other objects lying about, would, to use the language of fable, appear extremely stupid. It would be an *unnatural* action, *i. e.*, it would be an *artificial* one. If successful in securing the end, unattainable by direct effort, it would be an exercise of true art, and would involve an acquaintance with the principles of true science.

The vast and incalculable advantages which the indirect method possesses over the direct method, as well as the fact that by it alone has all human progress whatever been achieved, have been insisted upon, and the reasons therefor urged, in numerous places and ways in the previous chapters of this work (vol. i, pp. 476, 551; vol. ii, pp. 99, 130, 160). This ground need not, therefore, be again gone over. The present aim has been to point out the systematic position in a logical classification of human actions, which this form of pursuing ends naturally occupies. It constitutes the inventive process by which natural forces are turned to human advantage.

The several elements which were shown in the last chapter to make up human progress have all been begun and continued by dynamical actions. The great successive arts which have rendered possible the system of intercommunication (*supra*, p. 180) which now exists, as well as the varied practical inventive arts by which the material condition of society has been perfected (*supra*, p. 189), have all resulted from the recognition by the human intellect of the intermediate steps necessary to be taken in order indirectly to secure these great ends which presented themselves as remote objects beyond the reach of direct effort. They were all accomplished by the aid of means little if at all resembling the ends sought.

It is this characteristic of man's reason also that has given him that dominion which he exercises over the inferior brute creation. It is not the form or "image" of man, nor any instinct implanted in animals, which causes the latter to recognize in the former a master. If animals fear man, flee from him, or obey him, it is only after they have learned what he is, after they have found out by experience that he possesses that faculty by which he can destroy them at a distance, and can circumvent them in all their attempts to evade him. The hunter well knows when he has reached a region where man has not been. The game in such localities is no more afraid of him than of any other creature of the same size which it has never seen before. It only seeks to keep out of his reach. The hare or the grouse sees in him only a large animal, a strange creature, and takes only the same measures to escape as it would were he a gorilla or an orang-outang, although from these it would in reality be perfectly safe so long as out of their reach. It might be frightened at the novelty of the sight, but as much in the one case as in the other. It little dreams that he has power to destroy it at the distance of fifty or a hundred yards. Hence, as the hunter terms it, the game is tame. But let man invade the domain of these animals; let him settle upon it, and dapple the country with his houses and fields; let him, as he invariably does, hunt the game for a few years, and it will soon learn his power. It will then fear him as much at a hundred yards as it formerly did when within his reach. Every body with the least experience in new countries has seen this fact abundantly illustrated. And it proves that the animal world only knows the dominion of man after it has learned it; that this dominion is not a supernatural charm, but a real power.

The argument drawn from the obedience of domestic animals is still less apt than that drawn from the fear of wild ones, when used in proof of the doctrine of man's supernatural dominion. For they are only domestic because of man, and in respect to him. The domestic animal has always been under the immediate power of man, and hence, of all animals, it knows best the extent of that power. It only carries its recognition of his dominion further, because it understands it better. Instead of seeking to escape from his grasp, to avoid injury at his hands, it has learned, in a meek obedience to his demands, a new and different method of securing the same object. In all cases his dominion is due to his power, and that power is acquired through the superiority of his mind, which itself is only recognized by the brute when it has been made to feel and realize it. So true is this that among some savage nations the men are almost as much under the dominion of the animals as the animals are of the men.

But not only do man's dynamic actions give him dominion over the animal kingdom; they also extend that dominion over all the rest of nature. They constitute the progressive element of his nature. No progress can ever result from statical actions. If a man is hungry, he feels an impulse to eat, and, if any food is within his reach, he eats it, and thus preserves his life. But this is only preservative and not progressive action. He never feels an impulse to sow, that he may eat six months later. That is a deliberative act.

Avarice spurs men on to amass wealth, but progress lies not in the acquisition but in the judicious appropriation and application of wealth. Progress is nothing more than taking advantage of nature, and turning it into useful channels, so as to make it subserve the purpose of increasing human happiness. To do this requires, first, a knowledge of nature, *i. e.*, correct views respecting it; and, second, such action as will render those results necessary, *i. e.*, the application in practice of that knowledge. But, of course, all such acts must be of the dynamical class.

Thus, while impulsive and all statical actions are the more universal and natural, and while they serve the ends of *natural utility*, viz., preservation of human life, rational dynamic actions are artificial, and serve the great end of *individual utility*, viz., increase of happiness (*supra*, p. 132). As above remarked, it was these actions which gave man his dominion not only over the animal world but over all nature. That dominion when exercised over the animal kingdom not only protects him from becoming a prey to wild beasts, but it makes nearly all animals subserve his interests in one way or another. Either as food, or in yielding milk, or in furnishing skins, or fur, or ivory, or as beasts of draught and of burden, or in some other useful manner, he compels the inferior creation to minister to his wants. He does this in the same lawless way that the superior animals deal with the inferior ones, and often with less excuse.

In exercising his dominion over the vegetable kingdom, he multiplies its productiveness by cultivating the plants with which nature abounds, and from which, directly or indirectly, all animal life must derive its sustenance. He thus not only prevents the destruction of his species by hunger and want, but also enables the race to expand, and occupy regions where for a whole season no vegetation can subsist in consequence of the cold. He also turns the forests into fuel and lumber to protect him from the inclemency of such unnatural and otherwise uninhabitable climates.

Over the mineral kingdom man exercises a still wider and more varied jurisdiction. To attempt an enumeration of the many ways in which he reduces it to usefulness, would be unwarrantably to expand the subject. When we consider to what uses he has put the single metal iron, we may form a faint conception of what a vast field this is for the dominion of reason. He has also turned all the other metals into his service: lead, copper, zinc, silver, gold, platinum—all are in daily use in a thousand convenient and useful ways. So, too, all the rest of the important elementary substances are, in some greater or less degree, serviceable to him. There are, besides, many combinations which he has succeeded in making of these elements, creating so many distinct substances, each having distinct and peculiar properties.

In this enumeration, too, all the great agencies, natural forces, and mechanical principles discovered and put to man's service, must be embraced. The power of steam is but a property of that gas which, when confined by human device and conducted into the cylinder of the steam-engine, is made to propel machinery. The utilization of electricity according to the same general principle constitutes one of the grandest of human achievements. All the principles of mechanics and of physics must be included in this class of effects as produced by man's knowledge and the application of them to the purposes of his being.

We see in this brief sketch what a dominion man exercises over all departments of nature, and we may safely conclude that he has not yet reached the maximum limit of his power in this direction. But that power is wholly due to his intellectual faculty, which has guided his acts in devising indirect means of accomplishing ends otherwise unattainable. Such rational, or inventive, actions constitute the class which we have termed dynamic. Some idea of the importance of this class of actions may thus be formed.

The frequent allusions which have been made in this work to what has been called the indirect method of conation (*supra*, p. 99), which underlies all distinctively progressive, or dynamic, actions, have thus far been general and for the most part unaccompanied by specific examples illustrating its operation. The principle itself is too simple to require this in order to make it understood, and the aim has been rather to enforce the importance of its recognition as the cornerstone of Dynamic Sociology. Examples showing the precise manner in which this principle operates in all the great fields over which the human intellect has borne sway are easily furnished, and, with a view to greater completeness in the treatment of this subject, it is here proposed to enumerate a few typical cases of this class taken from the history of the progress of each of the great sciences of the hierarchy. The special aim of each illustration will be to show, first, that an insight into the laws of nature by the human intellect has been a necessary antecedent to success; and, second, that the acts performed in securing the desired end have consisted in some special artificial modification wrought in certain objects distinct from the end, and constituting the means of its attainment.

It will be convenient to follow the Comtean classification, and to proceed from the more general and "positive" to the more special and complex. It will, of course, be observed that all the results attained by the indirect method are in the direction of applying the truths comprehended to the ends desired by mankind, either to the more convenient and rapid acquisition of new truths, or, more generally, to the supply of the material wants of society.

Beginning with mathematics, we find that questions of number and quantity were among the earliest to press for solution, and the practical need of some means of stating and solving them early became a paramount consideration. The first valuable application of the indirect method took place in the invention of systems of notation. These were of two kinds, arithmetical and geometrical. The system of arithmetical notation adopted by the Greeks, the most brilliantly intellectual race of antiquity, happened to be very clumsy, and, although a better one is now known to have been invented by the Pythagoreans, it was never brought into practical use. This may, however, have really proved a gain to science, since it was doubtless in a great degree the inadequacy of their system of numerals that drove the Greeks to such lengths in the elaboration of a system of geometrical notation as a substitute.

The Romans, the next most highly cultured people of antiquity, adopted a method of notation only one degree better than that of the Greeks. Its inferiority to the one now in use, and known as the Arabic, is well understood by every school-boy, but may be better realized by attempting to perform a long multiplication by the use of the Roman numerals. Yet even in these systems there had been some invention, and the skeleton of the true system was outlined. The decimal method of counting having been ineradicably fastened upon all nations by the accident of the ten digits (*supra*, p. 66), these ruder methods of writing numbers were designed to simplify matters by assigning to a series of characters values increasing in a tenfold ratio. In the Roman system, too, an *arithmetical* "value of position" was recognized, a number being subtracted if placed before, and added if placed after another. This may very probably have been the first step in all countries toward a convenient system of notation. The other and more important step consisted in the adoption of what may be called a *geometrical* "value of position." The mere series of descending values, M C X I, embraces only one unit of each term. The problem was to express any number of such units. To do this, other numerals were placed over or under, or in front of these, to denote how many times each one was taken, as co-efficients of them, thus: $\overset{ii}{M}\overset{iv}{C}\overset{v}{X}\overset{ix}{I}$. This expression would then read 2459.

Simple as the step appears of neglecting the original units and letting their co-efficients stand in their places, which position alone would sufficiently indicate their value in the series, it proved one slow to be taken. Certain it is, however, that in India, Babylonia, Arabia, Persia, China, and Japan, systems of notation, embodying this simple but important principle, were in use * during the golden eras of Greece and Rome, where it was unknown, and it is an interesting speculation to contemplate to what lengths an acquaintance with it might have carried these nations, and particularly the Greeks, had they possessed it—so vast may be the consequences of a single happy idea.

The adoption of a convenient system of notation has been followed by a train of equally remarkable inventions in the elaboration of methods of arithmetical solution. The so-called "rules of arithmetic" have all been the results of successive improvements, each involving the application of the indirect method, insomuch that no age would think it possible to do business by the methods employed in the preceding age.† Algebra, which generalizes arithmetic, is throughout an invention. Geometry, and especially trigonometry, showing to what uses the important properties of sines, co-sines, etc., can be put, involves the inventive method in a high degree. The invention of logarithms constitutes one of the purest examples of the happy application of the indirect method which any of the sciences afford, while the well-worn history of the invention of the calculus can never be too often read as illustrating the astonishing acumen of which the human intellect is capable.* To all this may be added the perhaps still more brilliant achievement of Sir W. Rowan Hamilton in the discovery of the law of quaternions, by which motion and direction have been brought under the dominion of mathematics, as number and space had been previously brought under it.

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* Humboldt, "Kosmos," Bd. ii, S. 97, 126, 165, 288.

† See an article by Mr. E. O. Vaile on "Early Methods in Arithmetic," in "The Popular Science Monthly," vol. xvi (December, 1879), p. 204.

The greater part of all this immense work of mathematical invention has been accomplished by a few individuals who have chanced to possess that particular quality of mind which can follow a long train of consequences flowing from the use of appropriate means through to the ultimate end, which is never lost from view. In mathematics, as in all other sciences, the application of the indirect method is primarily an intellectual exercise, but here more than elsewhere the head performs the chief part of the work. The only muscular activities called for are those required in writing down the results of the mind's discoveries. The objects to be manipulated are simply the literal and numerical characters involved, and are used more for the sake of aiding the memory and securing publicity than as an essential part of the labor. Both the result and the method are purely ideal, but their practical utility only comes with their application to concrete facts.

Passing over astronomy, whose application to navigation affords numerous illustrations of the principle under consideration, we find in physics the phenomenal science in which it comes most obtrusively to the foreground. It is within this field that are comprehended the greater number of all the mechanical inventions. We can, of course, cite only a few typical cases.

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* Of this great discovery Comte expresses his admiration in the following language: "Des exemples de nature aussi diverse sont plus que suffisants pour faire nettement comprendre en général l'immense portée de la conception fondamentale de l'analyse transcendante, telle que Leibnitz l'a formée, et qui constitue sans aucun doute la plus haute pensée à laquelle l'esprit humain se soit jamais élévé jusqu'à présent" ("Philosophie Positive," vol. i, p. 175).

In barology, the simplest cases are such machines as run by the power of weights. These illustrate in the least complex way the truth, stated a few pages back, that invention consists in disturbing the condition of equilibrium in which all matter is found. The effort expended in winding a clock converts the potential energy of the weights into actual energy; and the force of gravitation, in equilibrating that energy, performs a valuable service to man. All applications of water as a power for driving machinery involve this principle. In the "overshot" wheel the power consists simply in the weight of the water constantly in a part of the buckets.

Not to speak of the machinery and gearing, the idea that human advantage might be gained by the construction of a dam and the accumulation of a head of water in a flume or penstock, was a shrewd device on the part of mankind. Yet this is among the simplest of the contrivances of civilization, and is well-nigh paralleled by the action of beavers.

If we seek illustrations in the department of optics, the invention of the lens is perhaps at once the purest example of ingenuity, and the most important practical discovery to be found. If glass had not yet been discovered, crystals of quartz might have been found, and the art would then have consisted in shaping these so as to produce the desired effect. But how could it be known that the convexo-convex form would magnify objects seen through it? Many such inventions were doubtless reached in part through accident, but there must be keen intellectual vision to perceive the meaning even of such accidents and to follow them up with experiments. Not only the principle of the microscope, embracing that of the eye-glass, spectacles, etc., but that of the telescope, were differentiated from that of the lens in general.

It was in the direction of the remote and the minute that the greatest ignorance and error prevailed in the world, and it is the lens that has taught us what we know of both. I need not dwell on its many well-known practical uses, but may hazard the remark that upon it, as a means of focalizing the sun's heat, the race may yet become absolutely dependent for its means of inhabiting the globe.

Chemistry is full of illustrations under this head. I will mention only one comparatively unimportant one, selecting it because it shows better than some others upon what simple actions the most remarkable effects may depend. The case is that of the Bunsen burner. A simple perforation in the tube conveying the gas to the burner converts an intensely luminous but moderately heating flame into an intensely heating but moderately luminous one, eliminating all smoke. This invention certainly was the result of pure scientific deduction from the known properties of the gas and the atmosphere. It is an example especially adapted to show what immense effects it may be possible to produce with very moderate labor when the laws of nature and the constitution of matter are systematically known (vol. i, pp. 34, 38).

In passing from physics and chemistry to biology, a radical difference presents itself in the manner in which human ingenuity accomplishes beneficial ends. Some might, perhaps, suppose biology to be wholly outside the domain of invention. But, when we remember in what invention essentially consists, it will become clear that such is not the case. Invention, as so often already remarked, consists in the employment of indirect means for the attainment of remote ends. It must follow, therefore, that not only stock-breeding and the improvement of cereals and fruits, but agriculture in its *ensemble*, are illustrations of invention in the domain of biology. Great as has been the progress thus far in these essential arts, they have, in the main, been pursued empirically. What results may become attainable when systematic science shall be applied to them, provided all the materials on the globe be not first consumed by the waste of the old system, can not be safely predicted. The application of the indirect method in biology does not fundamentally differ from its application in physics or mathematics. The immediate muscular efforts put forth are not directed to the end. Whether in mating the finest animals, in planting the seeds of the choicest food-plants, or in carefully preparing the soil and destroying noxious weeds, the process results from a rational foresight, and consists in the employment of indirect means wholly different in themselves from the end sought. If it can not be called invention, it can be called art, and art every-where rests on science (*supra*, p. 193).

It remains to consider the application of the indirect method in the domain of sociology. Thus far I have dwelt only upon the feeble results that have already been actually achieved. If these have been small in the more positive sciences and wholly empirical in biology, one would be justified in concluding that in the unborn science of sociology they must be *nil*. Yet this conclusion is too hasty. There is a certain point of view from which many of the operations of government may be regarded as, in a sense, embodying the progressive principle. Considering that its end is the preservation of the social order, governments have certainly devised means to that end. They have always professed to be seeking the advancement of the social state, and have adopted many measures designed to secure that end, but, not possessing even an empirical intuition of the complex laws of society, such measures have usually proved failures. Yet the credit must be conceded to government, whenever it has assumed functions affecting all the members of society, of having performed them in a more satisfactory manner than they had previously been performed under the operation of the so-called natural law of supply and demand; and, as stated in the Introduction (vol. i, p. 63), all its functions admit of being so regarded. There is not one of them that may not be conceived of as delegated to private enterprise. The punishment of crime, which we are in the habit of regarding as one of the most vitally essential to governmental control, has actually been so delegated within the historic period.

A few examples of the adoption of measures by government involving the application of the indirect method and embodying the principle of Attractive Legislation were introduced in an early part of the work (vol. i, p. 62), and, rather with a view to symmetry than better illustration, another typical example is added here:

To prevent importers from undervaluing their goods on which *ad valorem* duties were imposed, the customs officers were authorized by Article IV of the celebrated "Cobden Treaty" (January 23, 1860), if not satisfied with the values declared, to retain the goods by paying the declared value plus five per cent. The effect of this shrewd provision may be readily seen.

But upon the whole it must be confessed that progressive, or dynamic, action on the part of society as a unit belongs for the most part to the future of social science. If it ever takes place, there are two general classes of indirect means, one or both of which it must necessarily adopt. One of these may be called the biological, the other the sociological, means.

The biological means, as the name implies, consists in the simple extension of the present application of the indirect method in biology to human beings, considered as living organisms, capable, like all other living organisms, of physical improvement by artificial selection. That man is thus capable of improvement, there does not exist the least trace of a doubt; and, if any method could be suggested acceptable to the majority, its adoption would have a greater real interest for the future of the human race than that of all the issues about which nations go to war. But along with the undeveloped consciousness of the social organism goes a corresponding disregard for the remote future. It is only a few highly endowed minds that possess any really great concern for the condition of the world at a time when they know they can not be in it. With governments the sentiment "*après nous le déluge*" is not only proverbial but universal. It is vain, therefore, to expect that the biological means will be adopted before the sociological.

The sociological means is co-extensive with the principle which I have designated by the name "attractive legislation." It is in this that lies the only rational faith in the approach of a social scientific era. The present is the era of material science, the result of the application of the indirect method to mathematics, astronomy, physics, chemistry, and biology (exclusive of man). The era of social science, if it ever comes, will apply this method to the phenomena presented by the social forces, and the adoption of the sociological means through attractive legislation may lead to the adoption of the biological means through stirpiculture.

Those who contribute to human progress may be divided into two classes: those who *know*, and those who *know how*. Dynamic, or progressive, actions may likewise be classed as, 1, those which result in the *acquisition* of knowledge; and, 2, those which result in the *application* of knowledge acquired. This is the fundamental distinction between science and art.

It sometimes happens that an individual who knows, also knows how. In reality, those who know how must also know, but their knowledge is often to a great extent intuitive. They can not give an account of it. Their art is empirical. Where they possess systematic knowledge, it is not generally original. They have usually acquired it second-hand, and not obtained it by the study of nature. Those who really know are those who have found out by original research. Those who know how are those alone who *do*. Progress, on the one hand, is only brought about by *doing*. On the other hand, it is equally dependent upon *knowing*. But, again, in order to do, men must *know how*.

There has never been lack of action; but, except as controlled by the other two conditions, it must fall under some of the statical divisions and produce no progressive effect. The true progressive action must proceed not only from a knowledge of *things* but of *ways*. The progressive agent must understand both the nature of the objects which constitute the intermediate means to the remote ends sought, and how they must be adjusted in order, through them, to secure those ends. Science and art, which it is the tendency to divorce, should be more intimately united. So far as possible they should co-exist in the same individual. It should become better understood that, for any practical purpose such as tends to affect the mass of mankind, science unapplied is worthless. It may amuse great minds, but it can not elevate great populations.

The two classes of progressive actions, those which result in the acquisition and those which result in the application of knowledge, are equally important, and, although they must always stand in this order of sequence, it should be the aim to combine them as far as possible. Very little of what passes for education tends even to make men know. It should tend to make them not only know, but know how. It should also teach them to do. The human mind should be instructed in the art of arts, *invention*. The inventive faculty, the only progressive faculty of the mind, should be systematically developed, with a view to augmenting the proportion of progressive, or dynamic, actions.

Dynamic actions may be subdivided into two groups, according as they are performed by individuals or small corporations, or by society at large. Thus far, nearly all dynamic actions have belonged to the first of these groups. The inventive faculty requires a certain degree of independence in its exercise. The union even of a few minds upon the means to the attainment of a remote end frequently results in a degree of confusion incompatible with the adoption of any rational scheme. The mind must pursue a train of consequences from the inception to the conclusion of the process, and this requires complete isolation and freedom from intermixture with the ideas of others. Deliberative bodies rarely enact any measures which involve the application of the indirect method. If individual members who have worked such schemes out by themselves propose them in such bodies, the confusion of discordant minds, coupled with the usual preponderance of inferior ones, almost always defeats their adoption. Such bodies, miscalled deliberative, afford the most ineffective means possible of reaching the maximum wisdom of their individual members. A radical change should be inaugurated in the entire method of legislation. By the present system, not even an average expression of the intelligence of the body is obtainable. The uniform product of such deliberations falls far below this average, if it can be said to rise to a level with the minimum intellect in the body. True *deliberation* can never be reached until all partisanship is laid aside, and each member is enabled to work out every problem on strictly scientific principles and by scientific methods, and until the sum total of truth actually obtained is embodied in the enactment. The real work can not be done in open session. The confusion of such assemblies is fatal to all mental application. There need be no open sessions. The labor and thought should be performed in private seclusion, the results reached by others should in this way be calmly compared by each with those reached by himself, and a general and voluntary acquiescence by at least a majority in that which really conforms with the truth in each case should be deliberately embodied as law. The nature of political bodies should be made to conform as nearly as possible with that of scientific bodies; though there is this important difference, that scientific bodies meet for the purpose of promulgating the truth privately worked out, while the aim of political bodies is not to promulgate truth, but to adopt measures. This latter object is really nothing else than to devise means or invent methods. The truth upon which this action is based must have been previously reached and definitely settled. But this is a legitimate part of legislation. It is not enough to say that the legislator's education furnishes this knowledge, and he has only to put it in force. This can not be true even in theory. Each new measure must involve new principles which, from the nature of things, education or any kind of previous preparation can not have furnished. In this art, as in all other arts, and in the practical pursuits of life in general, education at best can only prepare men to begin the special investigation required for the practice of their professions. Every step through their career must be assured by special study of the principles to be applied in order to succeed.

The legislature must, therefore, as before maintained, be compared to the workshop of the inventor. The bulk of the work at all times to be done consists in investigation. The mere enactment of laws must in itself demand only a small proportion of the time of scientific legislators; although, when recognized as consisting in the application of natural principles for the attainment of remote ends which would not work themselves out, it requires more labor and pains than the crude *bruta fulmina* which now go by the name of laws. The study of nature, and particularly of human nature, with reference to ends sought, must constitute their principal duties.

The fundamental distinction between individual and social dynamic actions lies in the classes of forces with which they each usually deal. Individual dynamic actions are commonly directed toward the control of those forces which prevail in the domain of the lower or less complex sciences, while social dynamic actions must be to a great degree confined to the control of the social forces alone. Emanating from the center of social consciousness, they can only with propriety be directed to the adjustment of the relations between the social units, with a view to the prevention of social evil and the production of social good.

It seems needless again to remark that very few of the acts thus far performed by the social organism in its supreme corporate capacity have belonged to the dynamic class. Intellectually considered, social differentiation has always been far in advance of social integration. As in the solar system, the outlying members—the planets—have vastly exceeded the central mass—the sun—in the progress which they have made toward the dissipation of their inherent motion and the integration of their constituent matter, so, in society, while individual men have, at different times and in varying degrees, arrived at full consciousness both of themselves and of the universe, the social mass, the supreme psychic center of the social organism, still consists of a chaos of undifferentiated elements in the crude, homogeneous state. So great is this lack of integration in the social consciousness that society as a whole is still broken up into a large number of more or less remote and independent sub-societies, joined together more or less feebly by ties which differ in strength, from those of language and national characteristics in politically dependent states, to those of commerce, more or less irregular, between wide-separated peoples speaking in different tongues. When we speak of society, therefore, we must, for all practical purposes, confine the conception to some single autonomic nation or state, or, at the widest, to those few leading nations whose commercial relations have to a considerable extent cemented their material interests and unified their habits of thought and modes of life. But, even in this latter social unity, it would be idle to talk of any concentrated social action, since no law binds the several autonomies composing it except an international code drawn up by irresponsible jurists, and only voluntarily assented to by each, but liable to violation by any. Only where actual legislation is conducted can there be said to exist a complete social organism. Wherever any such complete social organism exists, it is possible to conceive of true scientific legislation. To a limited extent, the indirect method has already been applied by nations. In some cases, it has been applied to the injury of social interests, for want of a sufficiently comprehensive grasp of social principles, as, *e. g.*, where heavy duties have been imposed upon necessities of common life, with a view to increase the revenue easily without incurring the odium of direct *pro rata* taxation upon either property or incomes, the only just modes of raising revenue. In other cases, it has been applied to the real advantage of the state, although from only a dim and partially false perception of the social principles involved, as where protective duties have been imposed upon commodities obtainable within the country, the real motive being, however, to favor some influential class of producers. Very rarely or never have such duties been imposed for the true economic reason that it is a waste of labor to transport commodities great distances which can be obtained without such transportation. Some idea of the unorganized and chaotic condition of the world's commerce, so easily controllable by inventive legislation, can be formed by glancing at the leading articles of trade of any large nation, as France or England, and noting to how great an extent the same commodities are both imported and exported. The free-trade system tends directly to foster this wasteful process, and yet most persons think that free trade is the scientific, or liberal, as opposed to protection, as the empirical, or narrow, view of the economic questions involved. Some even go so far as to hold that *the more commerce the better*, as though it increased the weight or value of a commodity to transport and exchange it.

But this is only one of the questions which society is constantly called upon to consider, and there is scarcely one problem in the entire domain of politico-economics to which the principles here laid down might not be applied.

Finally, the fundamental problem of social dynamics is to show how legislatures may be lifted up to the position from which they will of necessity, and as a matter of course, legislate according to the scientific method. The discussion of this problem belongs to a future chapter (*infra*, p. 571), and need not be anticipated here further than to point to the irresistible tendency of governments toward the popular representative character, in which the legislature can at best but represent the intelligence of constituencies. It is, therefore, upon these latter, upon the people themselves, that the influences must be brought to bear which are to transform the character of legislatures.

The problem is a difficult and complicated one. While legislators as a class are far behind the few progressive individuals by whose dynamic actions social progress is secured, it is also true that, as a general rule, they are somewhat in advance of the average constituent, sometimes considerably so. This is seen in many quasi-scientific enterprises that they quietly continue, which their constituents, could they know of them, would promptly condemn. The question, therefore, arises whether the legislators may not find means, as a work of supererogation, to place their constituents upon the highway to a condition of intelligence which, when attained, will in turn work out the problem of inaugurating a scientific legislature and a system of scientific legislation.

CHAPTER XII.

OPINION.

DIRECT MEANS TO PROGRESSIVE ACTION, OR THIRD PROXIMATE END OF CONATION.

The psychology of ideas—Correctness of opinions—The notion that harmony of opinion is a desirable end in itself—The opposite idea that it is something to be apprehended—Differences of opinion usually unnecessary—Subjective barriers to the acceptance of truth—Settlement of opinion in the individual—Ambiguity and varying definitions of the term "belief"—Beliefs and opinions depend on the evidence presented, regardless of its legitimacy—Tests of certainty—Nature of truth—Verification—Settlement of opinion in society—Subject-matter of opinions—Origin of opinions—Fruitless attempts to coerce opinions—Principal sources of error—Subjective influences—Ante-natal influences—Post-natal influences—Quantity distinguished from quality of opinions, or ideas—Objective influences—Theory of experience—Opinions and ideas the result of experiences, and will correspond to them in importance—Artificial determination of opinions—Ethical and dynamic opinions—Ethical opinions—Confusion of morals with religion—The Hebrew decalogue, in how far moral and in how far religious—The idea of advantage considered as underlying the ethical system—Scope of the advantage—Reliability of the judgment—Causes of the variability of ethical opinions—Varying powers of moral discernment—Confounding religion with morality—Confounding custom with morality—Dynamic opinions—Cosmological ideas—Biological ideas—Anthropological ideas—Sociological ideas—Conclusion.

In the preceding chapter we have seen that social progress, defined in terms of human happiness, is chiefly brought about through ideo-motor actions, viz., actions which are originated by cerebration and not by sensation. The external impressions from which the mind obtains the data for such cerebration have been previously made, and the qualities of the objects making them are registered in the brain-substance. Brain action elaborates the material thus acquired, and reaches conceptions of wider relations (vol. i, pp. 401–405). Different minds see different relations among like objects, and questions arise. The data are re-elaborated, additional data are sought and combined with previous data, and at length settled convictions are reached. These may differ diametrically upon the same question, but, whether true or false, they become the motives to action. They give rise to desires which constitute the will, and motor discharges take place in obedience to these desires. All the most important human actions proceed from this source. From the classification made in the last chapter, it will be seen that there are two important groups of deliberative, or ideo-motor, actions, viz., ethical actions and dynamic actions. Upon the first rests the social order, upon the second depends social progress, but without the first the second would be impossible. Both these important fields of action are dominated absolutely by the opinions that prevail. The truism that ideas rule the world simply means that opinions determine action. In a general sense, what men do depends upon the views they entertain.*

The value of human action will chiefly depend upon two qualities residing in human opinions:

1. On their correctness.
2. On the importance of their subject-matter.

Let us consider each of these qualities separately.

CORRECTNESS OF OPINIONS.

While it is perfectly true that freedom from doubt is the end of all inquiry by the individual,† this is not the end which the social welfare (or even the individual welfare) demands. The idea entertained by some that the chief cause of the evils of society lies in the conflicting opinions held by its members, and that the unification of belief is the great end to be striven for,* is only a half-truth, and might result in far worse consequences even than those that flow from an unorganized state of public opinion. Erroneous opinions can by no possibility be attended with a surplus of advantage to all affected by the resultant action. For an opinion to have value it must have a foundation in fact. The qualities declared to agree must in reality agree. The relations thought to subsist must in fact subsist; otherwise, action proceeding from such supposed agreements and relations will constantly betray the lack of correspondence, and snares and pitfalls will soon await the deluded agent.

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* "C'est l'esprit qui gouverne et l'homme qui agit selon sa pensée bien plus souvent qu'il ne le croit lui-même" (Guizot, "Histoire de la civilisation en France," vol. iii, p. 377).

† Professor Charles S. Peirce in "Popular Science Monthly," vol. xii (November, 1877), p. 6.

The great *desideratum* is not unity of opinion but correctness of opinion. It is true that the latter implies the former, but it is unfortunately not true that the former implies the latter. In making correct opinions universal, we make all opinions on the same subject identical; but the latter result is not an end, it is merely an incident. The end is to render opinions true, and, this secured, the consequences may safely be left to take care of themselves. The settlement of opinion, whether in the individual or in the community, may be the end of inquiry, and the only result that can satisfy the intellectual demand; but this, of itself, unless the settlement be in harmony with objective reality, can never satisfy the physical demand. It is of small consequence that the demands of logic, in the few minds that think, be supplied, so long as the demands of sense, in all who feel, are denied. So far as the latter are concerned, that condition of mental instability and mental pruriency called doubt, or skepticism, is far better than a state of settled belief in that which is not true. But, even if the settlement and assimilation of all opinions were the end, the only true mode of attaining it would be through their verification. For, so long as the settled and universal conviction remained out of harmony with reality, the intellect would continue to catch occasional glimpses of this fact, and a condition of instability would inevitably result. Moreover, so inexorable is the logic of causation, that in such a state this lack of correspondence between thoughts and things, between organism and environment, would perpetually entail evils upon society, and force mankind to suspect that there was some fundamental flaw in the social system. Not only would the deepest thinkers of such a society penetrate the illusion, and even at the risk of martyrdom, as has frequently happened, proclaim the truth, but the great "common sense" of the mass, without being able to perceive the truth, would feel a perpetual consciousness of the existence of error, and be ever ready to second, in the way most fatal to social order, any movement in the direction of a revolution in the system of moral and social government.

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* Comte, "Philosophie Positive," vol. i, p. 41; vol. vi, p. 632.

Equally unfounded is the opposite view, intended as an answer to the school of unifiers, that there is something to be dreaded in the idea of a complete harmony of opinion, that difference of opinion exerts a wholesome influence upon intellectual and social progress, and that unity of views upon the chief topics of any age would result in mental stagnation and social degeneracy.

The fallacy here lies in the implied assumption that the opinions held by both parties contain germs of both truth and error—an assumption contrary to the hypothesis. These charges are indeed true where the settled opinions of a people are only partially true or mainly false, as has been the case in human history, but they are wholly inapplicable to a supposed case in which these settled opinions are wholly true. The idea that discussion and dispute about matters in general constitute a means of progress is the generic form of the idea, previously noted (vol. i, p. 75), that intense partisanship in matters of state is a means of arriving at political truth. Both the general and the special cases merely constitute examples of the still more comprehensive generalization, also before formulated (vol. i, p. 72; vol. ii, p. 86), that the genetic, or consensual, mode of development is necessarily attended with enormous friction and perpetual rhythm, causing the loss of all but a small percentage of the gross amount of real progress gained.

But it may be said that the settlement of opinion in complete harmony with truth must be dismissed as an impossibility; that such is the constitution of the human mind that all can not be made to see truth from the same point of view, and differences of opinion must needs exist. Practically, this may be true, but not theoretically. It may be that, as a matter of fact, there will always be certain problems unsettled, and about whose solution different minds, though perhaps of equal ability, will hold opposite views. But it is, nevertheless, true that certain other problems may become settled, and so settled that they can never again be unsettled.

Many such have already, to all present appearances, reached this state of complete equilibration. It is exceedingly doubtful whether the truths of the multiplication-table or of Euclid's theorems will ever be disturbed in their quiet slumbers. So it is with all that we call the *science* of mathematics, yet it is also true that even in mathematics there have been much discussion and difference of opinion; and this is still the case with the higher and more abstruse problems daily discussed in mathematical journals, as, *e. g.*, the question of "space of four dimensions." But we need not confine ourselves to mathematics, which is not really a science, but only the test of all the sciences (vol. i, p. 106). We may find abundant examples of settled opinions among purely phenomenal sciences, and respecting problems as to which there were long supposed to be two sides, each of which was ably and bitterly defended. Astronomy, perhaps, furnishes the best-known illustrations. The heliocentric theory was long the battle-field of opinions even by astronomers themselves. Opinion respecting it has now become so far settled that there is no educated person, not even in orders, who honestly questions it; and a modern work,* claiming seriously to challenge its truth, was simply an object of general ridicule. There is little more chance for the truth which Galileo recanted before a grave consistory of learned prelates ever to be again seriously questioned than there is that it will some time be denied that a right line joining two points is the shortest distance between them.

Geology, too, now consists of a body of established facts. The most important of them are not yet proved by actual experience, and are, from their nature, incapable of such proof. Yet they are no longer questioned. Opinion, which once ran high respecting them, is now completely at rest. There remains no one to gainsay the assertion that stratified deposits found upon high mountains were once at the bottom of the sea, where they were formed. No one any longer disputes that the fossils found in such positions were once living creatures inhabiting the sea. And, while no one can say with any degree of definiteness how long ago these fossils lived, scarcely a cultivated man can be found who honestly doubts that it must have been, in most cases, very much more than the long-claimed six thousand years. Upon such problems, if opinion is not yet universal, it is so completely settled among all who at all comprehend the conditions of the problems that its complete unification must result from a general diffusion of an acquaintance with those conditions.

We might go in like manner through all the established sciences: physics, with its law of gravitation; chemistry, with its laws of proportions and elective affinities; biology, with its law of deterioration through interbreeding—all now settled, though once disputed.

It is true that in these sciences there are still some open questions—questions which are now where these were formerly—in process of equilibration. Such are the nebular hypothesis, the undulatory theory of light, the transmutation of organic species, and the general law of development, or evolution, in all the departments of the universe. These propositions are not yet so far settled but that many able minds openly reject them still. Yet each one of the hypotheses named seems to embody a truth, and to be rapidly approaching the completely equilibrated stage. But at the boundaries of every science there are disputed questions of increasing degrees of doubtfulness, some of which are destined to crystallize into settled truths, and others to be yielded up as errors.

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* "Theoretical Astronomy examined and exposed." By "Common Sense" [John Hampden (?)], London, 1869 (?).

Contemplating those settled propositions in science which have formerly been unsettled, is there any one who will maintain that their settlement has tended to produce intellectual stagnation or social degeneracy? Do not all rather feel that such settlement of opinion was an essential prerequisite to further discovery of truth, and the advancement of both intellectual and social progress? Is there, then, a certain kind of opinions that it is better to leave open than to have settled in harmony with truth, while such is not the case with this kind of opinions? The fallacy is too obvious to pursue further. The settlement of opinion is worse than doubt or dispute, unless it can be settled upon the basis of conformity with objective reality. If it can be so settled, no matter what the subject of opinion be, it is of the utmost importance that it come to absolute rest.

It is a remarkable but an obvious fact that most actual differences of opinion are wholly unnecessary. The data for the complete settlement of opinion are extant. Incorrect opinions are held through life, influencing action against the interests of progress, when the means of exchanging them for correct opinions have existed for years, or perhaps for centuries. This is not the fault of the individual. It is the defect of the social organization, which would be the chief gainer in preventing it. The greater part of the questions about which antagonistic views are entertained ought not to be capable of arising any more than disputes could arise over the settled truths of geometry. The loss which society sustains through its failure to diffuse the data actually elaborated, often at great expense of time and effort, is beyond calculation. Opinions are only settled at great expense of intellectual energy. Discussions, debates, dissensions, and disputes cost society heavily in its most important commodity.

Truth has a twofold object in social economics—the one statical, the other dynamical. It first furnishes the means to the immediate increase of individual gratification, achieving to that extent the ultimate end of being. But it also forms a basis for the elaboration of new truth, and thus becomes a progressive means to the attainment of the end in higher degrees. But, so long as there is difference of opinion, truth can not be said to be reached. Even if one of the parties to the discussion have actually reached it, its unsettled condition precludes fruition. Not until it is absolutely fixed beyond the remotest apprehension of further disturbance can it fairly begin to yield its natural benefits.

It therefore becomes the highest duty of mankind and society to see to it, with the least possible delay, that all questions capable of complete settlement be immediately put in the way of such settlement. Let there be no excuse for any one to debate a question which has at any time or place, or in any manner, been once definitively answered.

In the present state of society, a small class of advanced minds simply look on and smile at the mad surge of bitter polemic that engrosses the great mass. To them the truth has been long patent, and may have become trite. Powerless to extend it to the rest of the world, they are tempted to regard the "common herd" as they would regard a drove of cattle on their way to the slaughter-house.

Could all resolvable questions be put completely at rest throughout the whole world, the result would be to shift the energy, now wasted in discussing them, to the new field of problems never yet definitely solved. It would do much more. As we just saw, the chief object of truth is to afford a better basis for arriving at other truth. Not that truth is an end in itself, but through improved means the end is secured in a vastly accelerated ratio. It is therefore necessary to work for truth as an end, since the real end must come through the means. Every opinion now disputed, but for whose complete settlement the data exist, would, when thus universally decided, become a new truth, to be employed in the settlement of still undecided questions and the establishment of additional truth. Could this process be thus systematically continued, and every question of opinion be disposed of on the side of real fact as soon as the data for its solution were laid before the world, the march of correct ideas must become extremely rapid as compared with their present progress. If such a condition of perfect social organization be deemed impracticable, this does not in the least lessen the necessity of making the strongest possible effort in the direction of its realization, since the results must be proportional to the degree of success.

One great barrier to the attainment of correct opinions lies in the undue preponderance of subjective influences. Truth can only be grasped by the intellect. It can not be determined by the feelings. Whatever its subject-matter, it must ever be regarded as objective. The progress of correct opinion is in great part measured by the proportion which this objective mode of looking at all problems bears to the subjective mode. This truth is crystallized in the proverb, too generally true, that "the wish is father to the thought"; or, as Bacon puts it, "*Quod mavult homo verum esse, id potius credit.*"* In reality, the wish should never have the remotest connection with the thought. Cold calculation is the only reliable guide. A truly healthy state of public opinion can never be reached until it becomes impossible to determine the personal bias of a speaker when expressing his opinion on questions of fact. So sparingly is this the case now that any one who should thus objectively express himself would not receive due credit for it as an opinion, but would be at once assumed to desire the result predicted. This disposition to impute the wish to the thought, though prevalent in minds of all classes, seems peculiarly inherent in the female mind. A man of known sentiments is liable to have the confidence of his female friends rudely shaken if he ventures to declare his belief, upon however strong evidence, that any thing will take place which would be contrary to those sentiments. I have frequently attempted, in such cases, to explain that it was upon the evidence and contrary to my desires that I rendered the decision, but, while this course has generally proved satisfactory to the male mind, I have never felt that it was appreciated by the female mind, a lingering doubt appearing to remain as to the stability of my sentiments and predilections.

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* "Novum Organum," lib. i, aph. xlix.

The great prevalence of this subjective view of objective facts can also be very clearly seen in the dogmatic certainty with which partisans predict the success of their party upon both sides of the same contest, wholly regardless of the real conditions upon which the result must depend. This tendency may, it is true, and doubtless does, appear greater than it is, in consequence of the policy of not admitting doubts even where they exist, through fear of affecting the actual result; yet among the great mass their convictions are honest, and rest upon little else than their simple preferences. The same truth holds in all departments of social life. The real evidence is only incidental, while the desire is paramount in the formation of opinion.

It may well be asked of what use such opinions are. The desired is no more likely to occur than the undesired. Opinions based on desires are therefore about as likely to be false as true. Human judgment, instead of being an additional evidence of truth, adds nothing to the other external evidence. Strange as this proposition may seem, it is only one view of the more general proposition, established throughout human history, that the universality of a belief is no evidence of its truth.* Utterly groundless beliefs have clung to mankind from the remotest periods, to be rejected within the present century, and a strong suspicion exists that other equally false ones still abide, to be thrown off perhaps centuries hence.

The remedy for this deplorable condition of things must come, if at all, from the gradual extension of the exact, or scientific, method to every department of human thought and opinion. Politics, law, business, morals, and even religion, must fall under this *régime*, and every question, from the success of an enterprise to the hope of salvation, must be made to yield to the logic of fact, evidence, and statistics. Opinions resting upon any other basis are worse than worthless, and to cling to them is suicidal.

The transition from the unsettled to the settled state of opinion is not abrupt, but represents a series of modifications. It may be looked at from the point of view both of the individual and of society.

SETTLEMENT OF OPINION IN THE INDIVIDUAL.

In the case of the individual, several of the stages have received distinct names, but different languages differ in selecting these salient points on the scale. Kant employs as the generic term the clumsy but expressive word *Fürwahrhalten*, and says that this has three degrees, represented by the three terms, *Meinen*, *Glauben*, and *Wissen*. The first may be translated *presumption*; the second, *belief*; and the third, *knowledge* (certainty). The first, he says, is both subjectively and objectively insufficient to satisfy the consciousness; the second is subjectively sufficient, but not objectively; the last is both subjectively and objectively sufficient.† What Professor Peirce speaks of as the "settlement of opinion" is simply the second of these stages. It is, indeed, subjectively sufficient, but objectively it is insufficient. Thus far, the world seems to have been satisfied to rest with this subjective sufficiency.

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* Tylor, "Primitive Culture," London, 1871, vol. i, p. 12.

† "Kritik der reinen Vernunft," pp. 541 *et seq.*

With regard to the earlier stages of opinion, Kant asserts that the true test as to whether it is a mere persuasion or a settled conviction is the *wager*; for one may be sufficiently persuaded to wager a ducat when he would find his faith giving way if asked to wager ten.

In the use of the word "belief" there seems to be a wide difference between theory and practice. Many, perhaps correctly, insist that "belief implies evidence, and is founded upon it." * Spencer says that "the word *belief*, having two radically opposed meanings, admits of being misinterpreted. It is habitually applied to dicta of consciousness for which no proof can be assigned: both those which are unprovable because they underlie all proof and those which are unprovable because of the absence of evidence—both those which are most certain and those which are most uncertain." He further remarks that "men are liable to confound the things they truly believe with the things they believe they believe. Very commonly in Philosophy, as in Theology, there is a formal acceptance of a proposition without any real acceptance of it—without any proper representation of that which it asserts. The proposition having had its two terms identified in thought as known terms, and having had the relation it names identified as a known relation, it is often supposed that the specific terms have been brought together before consciousness in the specified relation, and believed; when, in fact, they do not admit of being brought together before consciousness in this relation at all, and can not therefore be believed *in the proper sense of the word*." † Dr. Carpenter also says: 'There are multitudes who do not feel called upon to inquire for themselves, but consider themselves justified not only in accepting a body of doctrine which they regard as on the whole beneficial, but in recommending it to the acceptance of others. Such persons can not be truly said to *believe* a set of propositions, the evidence of which they have never studied, and the very language of which (framed as the expression of ideas that have long since passed away) they do not understand." *

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* "Popular Science Monthly," vol. xiii (July, 1878), p. 369.

† "Principles of Psychology," vol. ii, p. 405, note.

This view is still more sweeping, and narrows down the field of legitimate belief until it is nearly identical with that of knowledge. If all this be true, then, not only is our language extremely defective in the absence of a term to express a confessedly very prevalent mental state, but this word *belief* is indeed grossly misused. In fact, so universal is its use in this alleged improper sense that, if it is ever possible for custom to sanction any thing in language, it must be held to have sanctioned this meaning of the word "belief." At all events, whether there exist any word to express it or not, the greater part of all human ideas conceived as embodying truth have belonged to this same objectionable class. This is especially true, as was shown in a previous chapter (*supra*, p. 266), during the earlier stages of development. Only the most superficial and obvious truths were perceived and utilized, while the great body of thought consisted of these so-called "pseud-ideas"—ideas which not only declared relations that did not in fact exist, but relations whose terms could not be brought together in consciousness. If these were not beliefs, they were certainly important mental states which neither psychology nor sociology can afford to ignore. It is only in recent times, under the all-changing influence of scientific methods, that the condition, insisted upon as belief *par excellence*, has come to prevail to any wide extent.

The transition from what is popularly called belief to what is technically so called is more important than that which carries the mind from one stage to any other of the legitimate series. For these latter we have already terms enough. It would therefore be better to surrender the word "belief" entirely to the designation of this illegitimate state. The word "faith," it is true, is made to embrace this general field of mental operation, but its practical application clearly unfits it for taking the place now filled by "belief." If, therefore, we were allowed to distinguish a belief from an opinion by exempting the latter from the necessity of resting upon any evidence, as the former clearly must, however inadequate that evidence may be, we should have at least one trenchant division of this confessedly obscure and confused subject. There certainly exist in fact the two general classes, real ideas and false ideas. By whatever name they may be called, the latter as surely exist as the former. Neither are they radically dissimilar in any other respect than that of their psychological nature. In their chief characteristic, from the sociological point of view, viz., their tendency to produce action, they are identical with genuine opinions. This fact renders it important that, in its efforts to bring about the general settlement of opinion, society should first specially aim to convert all pseud-ideas into true ideas. There is no more insidious danger than that of mistaking settled belief of the illegitimate class for the attainment of truth itself. This has been the great fallacy of all ages. Dogmatic faith, firmly fixed in transcendental propositions, has always been to a greater or less extent confounded with positive truth, when in reality they stand at the very antipodes of consciousness.

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* "Mental Physiology," p. 407.

This barrier once leaped, and the ideas all fairly resting upon legitimate evidence, no matter how inadequate, the mind passes naturally from the feebler to the firmer states of opinion with no other aid or influence than those of increasing evidence. Nothing can prevent complete conviction but the absence of such evidence, and with such evidence no subjective power can resist its normal effect. The result is as certain as that a body will move when affected by a force stronger than its inertia. All apparent exceptions simply prove that in such cases the evidence has not in fact been received.

This truth has a still wider application than the one here noted. It is unfortunately the case that the evidence, in order to be effective in settling opinion, need not be either legitimate or complete. Opinion may be settled at variance with truth by the simple absence of opposing evidence. It is a saying no less true than trite that "any one may be made to believe any thing." * The mere utterance of a proposition, were there absolutely no other evidence, would produce complete subjective conviction upon any mind. It may be difficult to suppose such a case, but the same truth is proved in innumerable examples where educational influences surrounding the young are all on one side of propositions which are widely dissented from every-where beyond the sphere of this influence. We often wonder how learned and wise men in past ages could have accepted the absurd doctrines which we know they did accept. It was because they received no evidence against them. A child of parentage no matter how skeptical or talented, which should be brought up by savages, would at first accept their religion and customs. Its superior intellect might cause doubts to arise in later life where none existed among any of the tribe, but this would be the result of a greater susceptibility to the opposing evidence actually presented by the circumstances of even such a life. The avowed policy of the Roman Catholic Church rests upon this principle shrewdly perceived by its leaders. To make any one, no matter what his antecedents, a "good Catholic," only requires the simple exclusion of all evidence opposed to Catholicism, and beliefs thus firmly

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* Taylor, "Primitive Culture" (Boston, 1874), vol. i, p. 184; Spencer, "Psychology," vol. i, p. 421; Professor Peirce, *loc. cit.*, p. 10. Humboldt ("Kosmos," Bd. iv, S. 142) finds several authorities for the groundless belief that the odor of onions destroys the power of a magnet. This is a type of a multitude of such popular beliefs. Some one has said so, and no one has contradicted it; *ergo*, it is believed.

fixed in the early education are known to be difficult to disturb afterward in the majority of minds. Such opinions, it is true, are only subjectively sufficient and for the most part pseudo-beliefs, but, so far as the individual is concerned, they may be as unshakable as the most certain truth.

Is there, then, any reliable test of certitude? Is there any mark by which the correctness of a proposition can be known? Mr. Spencer says that there is, viz., "the inconceivability of its negation." * For such truths as will admit of the application of this test it is undoubtedly sufficient. But this is a comparatively small class—the truths of pure logic. From a practical point of view these are of far less importance than those phenomenal truths with which all have to do.

The distinction between *truth* and *fact*,† though logically manifest, is too close for our present purpose. We must deal with ideas of all kinds, and what we want is some means of knowing whether we are entertaining correct views or erroneous views respecting any subject whatever. "Truth," says Dr. Carpenter, "may be defined to be an apprehension of the relations of things as they actually exist"; ‡ and Mr. Spencer himself remarks that "what we call truth, guiding us to successful action and the consequent maintenance of life, is simply the accurate correspondence of subjective to objective relations; while error, leading to failure and therefore towards death, is the absence of such accurate correspondence." # This is precisely what we here mean by truth, and yet how powerless his logical test, in almost any case that might be supposed, to furnish an assurance of such truth!

Let us, then, inquire somewhat more closely into the nature of truth. This inquiry is old, and the ground has been repeatedly traversed by logical minds, but it is necessary to set down the result here before passing to other fields.

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* "Psychology," vol. ii, pp. 407 *et seq.*

† Whately, "Logic," p. 189.

‡ "Mental Physiology," p. 242.

# "First Principles," p. 85.

*Truth consists in the recognition of identity under varying external aspects.**

In what is called an identical proposition the subject and predicate are the same: A is A. But in most true propositions this form is changed while the substance remains. Unless ultimately reducible to the identical form, they are not true. If we say A is $A + 2 + 1 - 3$, we simply complicate the predicate a little without altering the truth of the proposition. Every algebraic equation is an identical proposition, and assumes the identical form when the operations indicated are performed. In most propositions, however, the terms used in one member are unlike those used in the other. They are of different extent, but the truth of the proposition always consists in the identity of a part of both, or of the whole of one with a part of the other. Similarity is identity of parts but not of wholes. The most important propositions are those in which the identity is only an attribute, or relation.

The discovery of truth, as distinguished from the discovery of facts, consists solely in the detection of a known attribute, or relation, in outwardly dissimilar forms or objects. The more dissimilar the circumstances concealing it, the greater the penetration required to detect it. The highest form of mental operation is that of *generalization*. Here the mind perceives the same quality in many objects, and forms of them a group. It then of other objects forms other groups. Finally, it perceives a quality in several whole groups, and selects out all such groups to form a higher and more general group. The wider the generalization the fainter the common character, and the keener the intellectual powers necessary to detect it. The discovery of facts furnishes the data for the extension of knowledge. The discovery of truth, *i. e.*, of the relations among facts, constitutes the extension of knowledge itself.†

* Cf. Condillac, "Langue des Calculs," liv. 1^{er}, chap. v, pp. 60–63; Alexander Bain, "Logic," vol. i, p. 16; G. H. Lewes, "Principles of Certitude" ("Problems of Life and Mind"), chap. v.

† Whately, *Loc. cit.*

Errors are cases of mistaken identity. The mind falsely supposes it perceives the same quality under different aspects. The quality taken for the same is another.

But the question still remains: How shall truth be distinguished from error? How may subjectively sufficient opinions be known from objectively sufficient ones? The test is easier named than applied. It consists in *verification.*

No belief is to be for a moment trusted which can not be objectively verified. All opinions must remain in the subjectively sufficient stage of settlement until proved. The verified alone is the known.

Verification is of two kinds: 1, by the senses; 2, by the reason. Where possible, nothing less authoritative should be received than repeated and varied sensual tests. It is upon such that the superior certainty of most scientific truth rests. But an almost, and in some cases quite, equal degree of certainty may be reached through rational verification; not the mere deliverances of the reasoning faculty from subjective data, but a rational comparison of the tangibly ascertained and verified data, and a legitimate deduction therefrom. While we have no power to perceive through any sense the ultra-microscopic motes that fill the air, the experiments of Pasteur and Tyndall afford a certainty of their existence and organic character second only to that which sense could produce. While we were not present when the upheavals took place which raised the strata of the Alps to their present position, rational deductions from a thousand facts converge so irresistibly to the theory of their submarine origin that it must be regarded as a verified truth.

This latter example is the type of the character of the most important problems of science and of life. The process by which opinion has become settled respecting it is none other than the *inductive* process. Inductive reasoning is little else than the cumulative verification of the given proposition. Each new fact in its support is additional proof of its truth. One fact clearly opposed greatly disturbs the tendency toward objective sufficiency of evidence. But, where no negative evidence appears, a certain amount of positive evidence amounts to proof. Such proof can never become absolute unless all the facts bearing upon the theory are known, a case which never occurs with respect to any question broad enough to be worth discussing. But in many cases the approach to absolute demonstration becomes asymptotic.

Scientific knowledge differs from the so-called knowledge of common life chiefly in being verified knowledge. The tendency should, therefore, exist to extend the scientific method to other departments of thought and action. This is the only method of bringing about the settlement of opinion.

SETTLEMENT OF OPINION IN SOCIETY.

The settlement of opinion in society, to the same extent that it is settled in the individual, only requires an equal distribution of the data upon which opinion rests. The state of objective sufficiency is a state of stable equilibrium; that of subjective sufficiency is a state of unstable equilibrium. Therefore, none of those efforts to exclude opposing evidence need be made which are necessary in the latter case. The legitimate evidence may always be trusted, when fully presented, to overrule the illegitimate evidence. Error is never dangerous when truth is left free to combat it. The real efforts required to be made are toward the diffusion of known truth. This process will not go on of itself. It is a true civilizing process, and must be artificially fostered and conducted. But the result is certain to repay a thousand-fold any cost entailed upon society.

It is important to point out that individual verification of all propositions, especially of such as admit of sensual tests, need not be actually made by all. A statement of fact once completely verified need not be verified a second time. It may then be safely inculcated as a known truth. All but the one individual who actually verified it will accept it as such, provided always that the means of re-verification be constantly left open. The moment this privilege is denied, doubts of the complete objective sufficiency of the proposition are liable to arise. Like the depositor who, hearing that his banker was unsound, demanded his deposit, but, when it was promptly tendered him, declined it, saying that if the bank had it he did not want it, the human mind demands proof of every proposition, the means of verifying which are cut off or denied, while it accepts any proposition as stable truth so long as such means are within the reach of all. Strictly speaking, a proposition can not be said to be thoroughly verified until more than one person has put it to the test. The experimentation, in addition to being varied to the utmost possibility in method, must also be varied as to the experimenter, lest the personal equation vitiate the result. But, when once satisfactorily settled, to the degree that any candid mind must concede its absolute truth as soon as fully acquainted with the process of proof, its original re-investigation by others constitutes a clear waste and expense to the energies of society. It becomes, therefore, one of the clear duties of society as an organized body to take thoughtful measures for the prevention of this loss, which is now one of the most serious that it suffers. It is not enough to settle opinion. The resultant truth must be so proclaimed as to prevent unnecessary re-verification, and to put an end to all discussion of the already known.

Subject-matter of Opinions.

We will next consider the subject-matter of opinions. Opinions influence actions in proportion to their importance. The acts of a great man are due to the greatness of his thoughts. The antics of a puppy, the play of children, and the trifling acts that make up the life of people of feeble intellect or benighted condition, represent in each case the character of the ideation from which they proceed. The fact to be specially marked is that, from the same degree of intellectual energy, entirely different motor results will flow, according to the nature of the ideas entertained. One class of ideas will produce immoral conduct and valueless, indifferent, or statical actions, when another class of ideas will generate exemplary moral conduct and valuable dynamic or progressive actions. From the one set of ideas there will result a life, if not injurious, at least useless to society, while from the other there will result a life of perfect moral rectitude, and, it may be, of vast positive advantage to the present and future of mankind.

The surest way to arrive at a clear conception of the subject-matter of opinions, considered as affecting action, is first to inquire into their essential character, and this inquiry must, in turn, be introduced by a consideration of their origin and antecedents.

ORIGIN OF OPINIONS.

Opinions are the result of circumstances, and are to be regarded as among the modes of existence which follow fixed and definite antecedents, and depend wholly upon them. The idea that men possess any power by which they can change or determine their opinions is wholly inconsistent with reason and with fact. Yet, as this idea has long and widely prevailed, and still prevails, it may be well to notice it briefly. The idea has come into prominence chiefly through religious controversies, and from the peculiar nature of religious beliefs.

The importance of reducing opinions of this nature to a single standard, of which the adherents of each form of religion have assumed to constitute themselves in each case the judges, has given rise to many heated discussions and much arbitrary exercise of power. But, in whatever else the parties to these strifes have differed with one another, they have all been agreed upon this: that, if the opponents only would, they might conform to their opinions. It is clear that to yield this point would be to end the contest. At least, it would render its further protraction absurd and ridiculous. For still to contend would be to seek the accomplishment of what had been already admitted an impossibility.

It is, however, more charitable and, perhaps, more reasonable to suppose that throughout these contests no one took this view. So thoroughly was the doctrine of man's freedom to will and to believe imbedded in the constitution and the sentiments of the age, that no man supposed it was any thing else than pure obstinacy which prevented others from believing precisely that which he believed. It was on this supposition that men proceeded, and, when this supposed stubbornness could not be overcome by entreaty or by threats, they acted perfectly consistent with their own doctrines when they sought to overcome it by force. They proceeded against opinions precisely as they would against actions. In fact, they regarded them as simply acts of the will. They never stopped to reflect that their argument applied as well to one party as to the other. Their party zeal ran too high for this. They never thought of trying to do themselves that which they insisted their opponents could do. Imagine a Roman Catholic zealot philosophizing with himself whether he could, by an act of his will, accept the heresies of Martin Luther! And yet nothing was more clearly established in his mind than that those heretics could return to the doctrines of the Universal Church the moment they should will to do so. So clear was this opinion that there arose a strong determination to act upon it and compel them to do so.

If it is impossible for a man to change his opinions, it must also be impossible for one person to compel another to do so. For in this case, as in the other, the party subjected to the compulsion would have to produce the change upon himself. The only difference there could be would be in the motive which influenced him. In the first case, it might be any motive at all. In the second, it must be fear of pain. And, if he can not do it by an act of his will, it makes no difference why he wills it. It is the will just as much, whether the motive be fear or interest.

Nor is it only by *a priori* reasoning that we arrive at this conclusion. It is abundantly confirmed by all human history. It is perfectly safe to say that there never was a successful attempt to force opinion. Every resort to this course has proved an utter failure. There have, indeed, been cases where fear of pain or death has induced parties to confess such a forcible conversion. But the confession never extended beyond the lips. There have also been cases where for whole generations the expression of certain opinions has been forcibly suppressed, while contrary opinions were to be heard everywhere, until these unprohibited sentiments became the only education of this new generation, and they, of course, believed them because unopposed. In this way public sentiment may become revolutionized by force, and often has been, though generally for the worse. But this is quite another thing from forcing a man to change his opinions. It is an *ex parte* system of education, and, instead of disproving the present proposition, furnishes, on the contrary, one of the most invincible proofs of the one on which it rests, viz., that opinions are the result of circumstances. It must not, however, be inferred that, because opinions are independent of volitions, they are therefore fixed or unchangeable. On the contrary, they are exceedingly sensitive and subject to change. But the influences that effect these changes must be legitimate. The power of the will is not one of those legitimate influences. The will has no jurisdiction over the judgments of the intellect. There is no better illustration of causal influences than this fact affords. If an opinion exists, it must have been produced; it must have a certain definite cause. The cause created the opinion. The opinion which sprang from the cause depends upon it and is sustained by it. Now, it is perfectly plain that in order to affect that opinion you must affect the cause which supports it. The opinion can not be affected in any other manner. If you wish to demolish a building, you must operate upon the building itself and destroy its foundations. No amount of labor bestowed upon another building on the opposite side of the street will have the slightest effect. Opinions rest upon foundations. They stand by the same power by which they were created. But it so happens that the will is not that power. No one ever created an opinion by will-power. The will is no more the true cause of beliefs than it is of climate. It was once supposed, and by many it is still supposed, that the wind and weather may be controlled by the will. For the will is but the desire, the wish, of an individual, and a fervent wish is all that constitutes a prayer. People have always supplicated the elements. Many a pious prayer still goes up for rain in time of dearth. But every man of science knows that rain does not depend upon human prayers, but upon the state of the atmosphere, the winds and moisture, and other real causes, involving the effects of the mingling of material substances—gases and vapors. These can be investigated and explained. By the aid of a knowledge of such facts we may yet acquire some control over the elements and over climate. If this is ever done, it will be in this way. But no exercise of will, unless guided by inventive thought, and followed by appropriate dynamic action, can ever influence the weather.

The reason is the same as that in the case of opinions when it is sought to influence them by the will. There is no *causal relation* between the two. They are independent, co-ordinate facts. They each have a cause, it is true. They depend upon something, and that dependence is necessary, absolute, and real. But one is not the cause of the other. The weather is no more the result of the wish than the wish is of the weather. The opinion is no more the cause of the desire than the desire is of the opinion. Not only so, but, while wishes can create neither weather nor opinions, both weather and opinions may constitute legitimate causes for certain wishes.

The fallacy we are now considering is the *non causa pro causa*, and is the chief support of every form of superstition.* A failure to assign the real cause for a fact, is the assigning as a cause of that which is not a cause.

We may now return and inquire as to the true cause of human opinions.

There is a necessary chronological order in which all the phenomena of mind take place. The first can be no other than sensation. This, as we have seen, results from the contact of external objects with the senses. All the modes, forms, and varieties of such contacts constitute the circumstances which are the immediate and essential cause of all psychic operations.

Now, as we also saw in our inquiries into the nature of mind, sensation has two aspects, or phases: a subjective and an objective. The first is sensation proper—conscious experience, or feeling. Following up that branch of the mind which proceeds from this primary quality of sensation, we find that there result immediately from it desire, emotion, and will.

The other aspect, or obverse side of sensation, is *perception*. It determines, by the locality, direction, and intensity of the contact, the nature of the object producing it, and thus cognizes the object itself, its qualities and character. The sensation and the quality producing it are correlative. A particular kind of resistance produces a particular effect. We only know the former by the latter. The subjective sensation is all we experience, the other is deduced, or inferred. It becomes a matter of judgment. If there are several sensations which are alike, we infer that it is the same quality which produced them all. This is perception, or apprehension. Following up this branch of psychic phenomena, it leads us to true intellectual operations.

Perceptions form the basis of mental judgments, and these constitute ideas and opinions. Hence the primary cause of every opinion is the experience of the senses. That experience consists of the circumstances by which the individual is surrounded, and which are incessantly appealing to his senses, giving him new perceptions, revealing to him the varied qualities existing in objects, and thus developing his intellectual faculties. Circumstances are therefore as much the cause of opinion as they are of mountains, rivers, or storms, and the opinions obey laws as definite and necessary as those which such physical objects obey. Were these laws as well understood, their results could be calculated with as much accuracy as can the motions of the heavenly bodies. All that is required is to know what circumstances will produce a certain opinion, and you have only to create those circumstances to be sure of the opinion.

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* See Bacon, "Novum Organum," lib. i, aph. xlvi.

We little dream how absolutely we are the creatures of circumstances, and to what extent our very thoughts are created by them. The civilized world of to-day, surrounded by comforts and luxuries, and reaping the benefits of an advanced state of art, science, and literature, feels proud of its condition and its superiority over semi-civilized and barbarous peoples; yet how few have ever reflected, how few know that it owes this pre-eminence wholly to circumstances—to the influence of comprehensive laws of nature controlling the whole domain of organized matter, the phenomena of mind, the very form and character of the body, and the quantity and quality of the brain! Who ever stops to consider, when reading the history of his race in the primeval ages of mankind, when wondering over the strange ideas, absurd customs, and false opinions which were then entertained, that, if he had lived then and there, he would have himself been one of those strange beings, would have shared their follies, their errors, their superstitions, as well as their habits and customs? Yet we can not doubt that such is the fact. The mass of mankind have no time, disposition, or ability to examine their opinions. They are like children. Their leaders are parents to them in all matters of opinion.

They assume to tell them what is true, and they can only believe. If the teachers are themselves ignorant, so much the worse for truth, but it makes no difference with the acceptance of opinions. They are formed in the same manner, whether false or true.

Most ideas are derived through the senses of seeing, hearing, and feeling, but there is a great difference in the quality, or relative correctness, of the opinions formed by the aid of these three senses. Those afforded by the sense of touch are the most reliable. Where a thing is actually felt, except in cases of morbid illusion, it is sure to exist. We may still err with regard to its nature, but less often than in other cases. Where doubts exist, the last resort is always to this sense. We know then that the object in question exists. The sense of sight comes second in the reliability of its apprehensions. That which we see we can pretty generally depend upon. Still, as it may be at a great distance, or may stand in a peculiar situation, it is less certain than if it were actually felt. But the chief case of unreliability arising from this sense is where opinions are formed from written language. If the writer states an error, and the reader believes it, he has acquired a false opinion. It is usually, though not always, the opinion also of the writer, but it has thus been communicated to another. But even in this respect the testimony of the eye is more reliable than that of the ear. For that which any one takes the trouble and care to reduce to writing is generally more correct. The writer hesitates instinctively, before he frames a sentence, to see whether it really does express his idea, or the truth.

But the sense which is responsible for the greater part of all the error in the world is the sense of hearing. Even with regard to the nature of sounds, as indicating the source from which they come, this sense is very unreliable. It is a difficult thing to tell the direction of a sound, and still more difficult to judge what it is that has produced the sound.

Still, if this were the only way in which hearing engendered opinions, they would be comparatively correct. The chief mode, however, in which it does this is through the medium of oral language. This is the source of the immense majority of all our opinions, whether true or false. It is on the wings of sound and through the medium of speech that come the first ideas of every one's existence. While the mind is tender and plastic, there pour into the ears a thousand thoughts and ideas, which it eagerly drinks in and makes its own. And in later years the great confused hum of public sentiment is wafted to the tympanum and beaten into the brain. Rumor is also perpetually making itself heard. It is thus that traditions come down, that maxims, true or false, are perpetuated, that all kinds of thoughts and opinions are derived, and the mind crammed, as it were, with confused notions of every thing. The ear is the great *entrepôt* of ideas, I do not say of knowledge. For, as I have said, it is through this channel that most errors are introduced. We hear too much to be expected to analyze it all. Most men do not stop to question the probability or reasonableness of any thing they are told. In a majority of cases it is believed or disbelieved, according to the source from which it comes. If they esteem the character of the person conveying it, no matter for what reason, they will generally accept it as true without questioning its merits.

Again, as already remarked, such is the constitution of the human mind that, wherever a fact is stated, and nothing is set off against it, it will be believed. This is the fundamental principle of legal testimony. Perhaps it is well that it is so. But the mind seldom makes an effort of its own to see whether there exists any such offset, either intrinsic or extrinsic.

This is often very unfortunate for truth. For frequently, by a little reflection, it might be discovered that a statement is unreasonable; or, by a little investigation, it might be found to be false. And thus error accumulates. Our heads are full of errors, poured into our ears and received on the faith of the utterer, or because not contradicted, or, many times, on a faith which is wholly blind and unsupported.

Such is the present condition of human opinions. Mingled and confused together, truth and error are stored away in the mind, to be called out, whenever occasion arises, for the formation of resolutions and the government of actions.

Subjective Influences.—We have seen that opinions are the result of circumstances, but these are not confined to the immediate contact of external objects upon the senses thus far considered. True, without such contact there could be no ideas. Their existence primarily depends upon this contact. But the nature and quality of these ideas, or opinions, are in great part determined and controlled by other and secondary influences. They depend much upon the constitution of the mind which apprehends, and not altogether upon the objects apprehended. This is a very obvious and a very important distinction. We have again here, as in all mental operations, the subjective in connection with the objective. The idea will depend not only upon the external object, but also upon peculiarities of mind. It is well known that different minds will acquire different opinions under the same circumstances. True, it is impossible to make the external circumstances in all respects the same. Still, they may be so nearly identical that, were there no other factors, both minds would deduce therefrom the same conclusion. But we find that in such cases we have often been mistaken; that, in cases where no one could detect the least difference in the circumstances, not only different but opposite opinions have been formed in different minds. We discover, therefore, that here is an element which we must not ignore; that opinions, so far as their nature and quality are concerned, are as much subject to internal as to external influences, to subjective as to objective impressions. This depends upon a variety of considerations: first, upon the constitution of the system, upon the state of physical health, upon the degree of sensitiveness of the nerves and senses, upon the degree of organization of the mind as a whole, upon the sex, the nationality, etc.; in the second place, it is due to those subtile influences which were preparing the way for the existing peculiarities of constitution, long before the individual had an existence. In a word, the circumstances which give rise to an opinion are of two kinds—ante-natal and post-natal. The former, though of much less importance and wholly subjective, are nevertheless necessary to be taken into the account. The latter are most influential, and may be subdivided, as has been said, into those which are subjective, and depend upon the mind as molded by previous education, and those which are objective, and consist in the contact of the external world with the senses.

With regard to the true influence of ante-natal circumstances, there may be differences of opinion. It is a difficult matter to decide in how far ideas and thoughts are due to hereditary influences, but all admit that, to a greater or less extent, they are dependent upon these causes. It is well known to the medical profession and to almost every body that the characteristics of our *physical* systems, their form, size, and proportions, their diseases, deformities, and constitutional peculiarities, are in a great degree hereditary, and are derived not only directly from parents, but from remote ancestors. These characteristics may disappear entirely for several generations, and again reappear (atavism), or they may be traced back through every stage, or degree, of a long lineage. All are familiar with this fact, and nearly every person carries in his own constitution evidences of it which he can not ignore. If the mind is but a property of the physical system, it should follow that it too must derive characteristics and peculiarities from ante-natal circumstances.

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We will next consider the other branch of subjective influences which tend to mold and modify human opinions, viz., those implanted in the constitution of the mind after birth.

When a person finds himself in the possession of an opinion on any subject, he may be sure that it is not altogether owing to the mere appeal which the objects of that opinion have made to his senses. It will always in some measure be due to the condition of the senses themselves. Aside from the peculiar bias which the senses, the mind, and the whole constitution may have received from ante-natal influences, there are also many distinguishing qualities which have been acquired since birth. These qualities are of two kinds: first, those affecting the *power*, or *capacity*, of the mind; and, second, those affecting its *mode of apprehending*. The first class simply determine whether an opinion shall exist, whether it can be entertained, whether the mind is capable of receiving it. We of this day hold thousands of opinions which the ancients did not and which other races do not hold, simply because we possess the intellectual capacity to comprehend them. For the same reason some men have ideas that others never get a glimpse of, for want solely of the power of apprehending them. Where the circumstances are the same the objects of the conceptions are constantly appealing to the senses of both, but the first class receive while the second do not, owing to incapacity. But, by the incapacity here mentioned, I do not wish to imply a deficiency of intellect. I believe, on the contrary, that almost every person is competent to comprehend the most important truths of nature (*infra*, p. 570). The incapacity is in the character given to the mind by education or want of education. These thoughts can not enter, not because there is no room for them, but because there is no gate by which they can be admitted. The avenues are all closed. Other less important matter, often the merest rubbish, is blocking up the gangways. The senses, like gate-keepers, will not listen to them; they are occupied by other things; they will not be persuaded to give their attention, or perhaps the din of other applicants drowns the voice of Nature, and they never hear her appeals.

The great struggle which the human race, in common with every other species, has had to make for its existence, has kept down every extraneous influence. The strife for food, clothing, and shelter has swallowed up all other considerations. Man's constant warfare against the enemies, drawn down upon him by his own error, has ever stood in his way whenever he has aspired to look upward for an inspiration. So long as man regarded the sun as a great fire-god, with power and will to destroy all who failed to do him homage, there was no hope of his pausing to investigate the nature and constitution of that celestial body. The proud thoughts which now fill us when we contemplate it were therefore denied him, and those of cringing terror took their place. So long as he is compelled to toil from morning till night to obtain sufficient to eat and to wear, he can not stop to ponder over deep and weighty themes of science or philosophy, much less can he find time to read, study, and investigate, whereby alone his mind can be awakened. So long as human education is confined to pure mathematics and the "dead languages," it can not be expected that any really important thoughts or any settled convictions on vital subjects will be stored up in the mind. The mind is as absolutely incapacitated in this way for entertaining broad or useful ideas as if it were incompetent to comprehend them, although it may have proved itself capable of solving the most difficult problems or of mastering the most abstruse philosophical intricacies.

This first class of influences, therefore, determines the *quantity*, as it were, of the ideas, or thoughts, which a person will entertain. Such influences will answer the question whether he knows any thing about the subject of a thought. This will depend upon the amount and character of the instruction or experience he has received. If he has been allowed to grow up without any instruction, and compelled to labor as soon as old enough to do so, no matter how bright may be his genius, or how great his talents, he will entertain none but ordinary ideas. If he receive a thorough and liberal education, though his talents be moderate, he will be in possession of enlarged views, and will hold intelligent opinions on many subjects of importance.

The second class of mental qualities implanted by education and experience, and which determine the *quality* of opinions by affecting the mode of apprehension, is not less important than that just considered. Here we suppose to exist two minds, differently constituted in this respect, surrounded by the same external objects, and influenced by the same circumstances. Two of these objects appeal to the senses of both these persons precisely alike, yet, in consequence of these differences of constitution in the two minds, in the senses of the two persons, one declares them to agree, the other declares them to disagree. They are qualities which both are equally capable of apprehending, but one views them from one stand-point, and the other from another. It is evident that either one or both must be wrong. As one views them, two terms agree, and the resulting proposition, expressing his judgment, is affirmative. As the other views them, the same terms disagree, and his judgment is negative. Of course, there must be some mistake in the process on the part of one or both. But it is due to defects in the mind or in the organs of sense. The qualities in question, as perceived in the two objects, are cognized by both minds. The difference of opinion arises only upon the question of their identity. Is it one quality inhering in both objects, or are there two distinct qualities? These are questions for the intellect. The answer depends, not upon the truth of the matter itself, but upon the manner in which it appears to the mind. If both minds were perfect, of course there could be but one opinion, and that in harmony with the truth. It therefore resolves itself, after all, into a question of capacity of the mind. But the mental incapacity which causes one or both to form a wrong opinion respecting qualities which they actually have apprehended is a very different thing from that incapacity which renders them incapable of detecting the quality at all, and therefore, of course, having no opinion about it, as in the last case considered. The present case depends upon the quality of the mind as serving to form a judgment upon things known, and not upon the power of the mind to acquire a knowledge of the things upon which to form such judgment.

Here, too, much depends upon the education and previous experience as tending to mold and fashion the mind itself. A certain course of education in childhood, continued on to manhood, presenting one side only of a general idea constantly to the mind and completely shutting out the other, will cause all questions relating at all to that idea to be answered uniformly in one way. The mind has a bias that way. It is so fashioned that it is incapable of giving any weight to the other view of the proposition. It is not because the intellect is itself weak or imbecile, neither is it because the subject has never been presented to the mind. It is solely in consequence of the peculiar quality which the mind has received from education which incapacitates it to take more than one view of the matter in question.

The extent of the influence of education, or the want of it, in affecting human opinions, is not generally, I think, fully appreciated. The want of sound education is always made up by a mass of unimportant and often injurious beliefs. The mind will possess about the same number of ideas. Education determines their depth, their value, and their correctness. Surrounded, as the reader probably is, by all the influences of civilization, accustomed to hearing intelligent conversation, to reading a variety of books and current literature, and having early implanted in his mind the foundation for a large fund of knowledge, it will be difficult for him to imagine the abject poverty of ideas into which the great mass of the human race are sunk.

Let him suppose for a moment one source of his information to have been always withheld—the art of reading. Suppose he could not read, did not know one letter from another. How much would he know? What would now be the character of his thoughts? How much of his present knowledge has been derived either directly or indirectly from reading? For it is not simply what he has himself read. If he had never read any thing, three fourths of the ideas derived from other sources would have been to him unintelligible, and he would never have comprehended them. Hence with respect to all this his mind would have been a total blank. And there are thousands among us in this condition. But there are thousands more, viz., savage races, in a far lower condition.

Again, special education powerfully affects the constitution of the mind, rendering it incapable of entertaining certain opinions. As already remarked, the mass of our race never stop to question what they are taught to be true. They receive it upon the authority of the teacher, without presuming that he could be in error. And it makes no difference how improbable or unreasonable a doctrine may be. In this respect the human race presents a truly wonderful spectacle. We find men believing every thing. The most irrational, contradictory, and absurd propositions are believed, in the greatest sincerity, by whole nations. It does not seem possible, if one were to try the experiment, to carry the matter further than it has actually gone.

There are certain general beliefs, usages, institutions, and principles which have an extensive scope, and influence vast multitudes of people, extending over great areas of territory and long periods of time, fixing the mental constitution, and giving it a permanent and powerful bias in a particular direction, so as to render it proof against all contrary influences. These vast secular opinions are no more likely to be true than the minor notions to which I have referred. It is a great mistake to suppose that a custom, usage, or institution is a useful one because it has come down from remote ages, or that a maxim or proposition is true because whole nations, even the most civilized, have from time immemorial accepted it. *Ὃ πᾶσι δοκεῖ τοῦτο εἶναί φαμεν* is a maxim which history has disproved.

It is not true that, if the custom were deleterious, or the maxim unsound, the experience of so many people for so many ages would have discovered it. This reasoning ought to be good, but unfortunately it is not.

There are anterior considerations based on the constitution of the human mind which in most cases not only destroy but reverse the entire reasoning. In point of fact, the worst customs, the most pernicious institutions, and the falsest maxims are the oldest and the most universal, and these continue to bias the judgment and derange the intellect of all within the reach of their influence.

Thus much for those subjective post-natal influences which predetermine the quality of an opinion under given external circumstances, and this completes the consideration of subjective, or constitutional, conditions as affecting human opinions.

Objective Influences.—It remains to consider the objective conditions, or circumstances, that is, the influence of the actual contact of the senses with external objects or their qualities. Rising from technical and exact into general and popular language, we may denominate this influence, taken in all its bearings, human experience. The theory of the artificial formation of opinions by the method of exclusion has already been stated (*supra*, p. 422), and we have only to glance at the general effect.

The intellect, ever active and busy, is constantly comparing the impressions and conceptions which it receives through the senses. Assuming that the senses are sufficiently refined to perceive the contact of these external objects, and also that the mind is affected with certain powers and dispositions by which, upon comparison, it forms a certain judgment respecting them, we have all the essentials to make up this experience. In thus comparing the conceptions momentarily formed in the mind, a mass of judgments, affirmative or negative, are caused to exist. Each such judgment constitutes in its turn a new element of mental action in the slightly different form of ratiocination, the result of which is always another judgment in the form of a conclusion from the preceding, and this may again be similarly employed, and so on. These judgments, from whatever source derived, are our opinions. They may be true or false, according to either, first, the reliability of the senses and the mind in the respective processes of judging the object by the sensation, and the agreement or disagreement when two objects are compared; or, second, the clearness and forcibleness of the contact. For, if the senses be too blunt for the experience, the latter will be defective, or, if the mind be too dull to make a just comparison, the judgment will be erroneous. And, on the other hand, if the experience be confused and neutralized by a mass of contemporary contacts, its effect will be so far lost as to render it unreliable, or, if it be too feeble sufficiently to impress the nerve of sense, the conception will be correspondingly weak, fleeting, and uncertain.

Since, now, it is the chief requisite of an opinion that it be correct, it is important, in seeking to create one, that these principles should be understood. Next after the establishing of that keen and refined state of the senses and the mind necessary to render the most delicate contacts and influences cognizable, and distinctly available to the mind in forming judgments, which is the province of early education and mental discipline, it is most necessary to bring the proper influence in a distinct and unmixed condition and with sufficient force to bear upon the sense to be affected. An opinion based upon such materials can not fail to be true and distinct. Vague, unsettled notions are about as bad when true as actual errors.[*] They can not result in resolute effort.

Again, a judgment may be important or unimportant, according as the experiences upon which it is founded are made by valuable or by worthless causes. Whatever be the value of the external influence, it will affect the sense according to its force, and, in the absence of useful impressions, the intellect will seize upon worthless ones, and will go on working them up into conceptions, judgments, and conclusions—will manufacture thoughts, ideas, opinions out of them—though when completed they are not of the least value. Furthermore, not only will the mind work up such material into opinions, but those opinions, like all others, will beget desires, and those desires will prompt actions, so that a whole life may be devoted to useless frivolities and trifles.[†] There exists in society an illustration of this truth, which is so clear and universally observable that I may be pardoned for adducing it. It is often remarked that women are, as a rule, more frivolous and trifling than men. Being the truth, it may as well be spoken, and the explanation will prove a sufficient vindication of the sex; for it will be found that their ideas are exactly as much less important than those of men as their experiences are less useful. Where the only objects with which woman comes in contact are those of the kitchen, the nursery, the drawing-room, and the wardrobe, how shall she be expected to have broad ideas of life, the world, and the universe? Her ideas are perfectly natural and legitimate. She has seen and handled culinary utensils, china, and silver-ware, and she has an idea of them. In the absence of other ideas, she will think about them, talk about them, have her whole mind absorbed with them. The mind must act, and this is all the material it has to act upon. It is the same of dress; her soul is engrossed in dress, since it is her most important object of experience. If you wish to make her forsake it, you must give her something else to think of. Give woman an interest in great subjects, and she will soon abandon small ones. If she knew as much about the great men of history or of her own age as she does about her neighbors, she would cease to talk about the latter and talk about the former. Teach her science, philosophy, law, politics, and you will do much to put an end to gossip, slander, and fashion-worship.

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[*] "Citius emergit veritas ex errore quam ex confusione" ("Novum Organum," lib. ii, aph. xx, "Works," vol. i, p. 390).

[†] See Herbert Spencer in "Sociology," vol. i, pp. 90, 91. "Men think under the limitations of their times both as regards the extent of knowledge and the intellectual processes to which they are habituated. They reason as they can on such materials as they have. . . . The human mind is essentially active, and will make theories; and the less its knowledge the feebler are the restraints of reason and the bolder the spirit of speculation" (Flammarion, "History of the Heavens," in "Popular Science Monthly," vol. x (March, 1877), p. 543 [Cf. "Histoire du ciel," Paris, 1872, p. 56]).

Illustrations of this kind might be multiplied. Apply the same principle to communities. Their breadth and depth of ideas will correspond to their experiences. Take one which is shut out from all communication with the outside world, away from railroads or telegraph-lines, deprived of schools, manufactories, and other live enterprises—the members of it will be found to have correspondingly circumscribed ideas. Their town will appear to them the whole world. They will be as much interested in the construction of a foot-bridge as most of us are in that of a transcontinental railroad. They will be as profoundly moved by the affairs of a borough as other people are by those of a nation.* They can think only about those things of which they know something. But they have only the faintest conception that a nation exists, and perhaps may have never heard of the Old World. I have seen communities in the United States in about this condition. In fact, throughout the Southern

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* "Ye think the rustic cackle of your bourg
The murmur of the world."
(Tennyson, "Idyls of the King—Enid.")

States, before the war of 1861, the poorer classes generally approximated very closely to this condition. Their State was the highest power they could be made to recognize, and many of them would doubtless have been willing to fight for it as for their country if told that a foreign power was likely to invade it. It was my experience, on one occasion during that struggle, to fall into such a community not a hundred miles from the national capital, whose condition was so benighted that there was but one person among them, and that a young woman, who could tell the value of a bank-note. And then I thought how preposterous it was to imagine such beings capable of committing treason against a government about which they knew less than some children at five years of age! But these are segregated cases in the midst of a generally intelligent people. The same principle may be applied to nations and races. The Shilooks of the upper Nile differ immeasurably from the enlightened nations of Europe and America, but not more than their circumstances differ. If we could imagine their conditions in every respect reversed, we might be sure that their ideas, thoughts, and characters would be also reversed. The European has the advantage of civilized culture and education, of high qualities inherited from his ancestors, of the written history of his race and other races for thousands of years, of communication and intercourse with all the world, of science, art, and literature, of libraries, newspapers, magazines. He is surrounded by and forms a part of the past and the present. The loftiest ideas and the greatest truths are unconsciously pouring into his mind. In fact, he is the product of the combined elements and influences of a broad and advanced civilization. The Shilook, on the contrary, is confined to the savage wilds of interior Africa. His language is barely capable of expressing the coarsest desires; literature is unknown, as is all symbolic communication. His history is confined to his tribe, and is a mere tradition, enlarging and evaporating into a myth as it recedes into the past. He has no art, not even that of furnishing clothing for his body, and indeed he does not need it. Climate, soil, vegetation, all the conditions of nature, conspire to relieve him of the necessity of courting experience. All his ideas beyond his immediate physical wants are mere conjectures or superstitions. In a word, his ideas and opinions correspond absolutely with his experiences.

And this is the inflexible rule. In fact, it can not be otherwise, since it is these latter upon which all ideas are based, and without which no ideas could exist. Hence, the only possible way to enlarge the sphere of man's thoughts is to force a higher, more useful, and more valuable class of experiences upon him. In other words, the circumstances which are to produce his opinions must be carefully *selected*, varied, and dictated by those who are interested in having him entertain correct and useful opinions. And this can be done. It is a false idea that men's opinions come by chance and at random. They come when they are caused, and they are just what they are made to be. They obey a law like all other natural phenomena, and that law may be known. The laws of the mind may just as well be reduced to a science and put into practical use as the laws of pneumatics or of hydrostatics.

Metaphysics has long been regarded as a sort of idle pastime, a branch of speculative philosophy, devised for the benefit of the lovers of the abstruse and the ideal when they have nothing useful to employ their minds about, or perhaps as a means of mental discipline for the advanced student. And indeed it has well merited this position among the various branches of education. It has, in fact, been what it has been called, "a bundle of theories." But psychology, which is the modern name of metaphysics, studied as a true science, and for the same purpose that other sciences are studied, viz., with a view to its application in ways that will advance human welfare, may be regarded as the basis upon which sociology must immediately rest, since, when properly understood, it reveals to man the course he must pursue in order to lay the foundation in just and enlarged ideas for both moral conduct and progressive action. Useful ideas and opinions, like all other useful things, must be to a great extent artificial; they must be *manufactured* before they will lose their present characteristics of unavailable "raw material."

ETHICAL AND DYNAMIC OPINIONS.

To the two principal classes of deliberative, or ideo-motor, actions, viz., ethical actions and dynamic actions, correspond two general classes of ideas and opinions. These mental states underlie, and are the immediate causal antecedents of, the bodily acts. It therefore does no violence to language to apply the same names to the motives as to the actions themselves. Men entertain ethical sentiments or moral ideas. They also hold progressive views. Ethical opinions cause ethical actions, and dynamic opinions cause dynamic actions. In the synthetic treatment here made of the subject, it was necessary to consider the chronologically later process first, but the logical dependence and definite order remain undisturbed. We have now to look more closely into the conative effects of opinions, and are left no choice but to study them in their two leading aspects, the ethical and the dynamic.

ETHICAL OPINIONS.

Ethical opinions consist of intellectual judgments respecting the effects of actions upon the happiness of self or others. They are originally in the nature of predictions. The effect must follow the act. But in a large proportion of the cases the phenomenon has occurred so often and its effect proved so uniform that laws have been formulated based upon this uniform sequence. These laws, taken together, constitute the moral code of society. In so far, the process is a strictly scientific one. But it is found that the phenomena thus capable of certain prediction are very restricted. They do not extend beyond the most simple cases. Attempts to generalize moral laws have usually carried them far beyond the condition of reliability or universality. The broadest successful generalization yet made is probably that of Christ, that men should do to others as they would wish to have others do to them, which was simply an improvement upon the Confucian rule, taught also by Hillel, and probably by Gamaliel, of whom Christ took lessons in Hebrew philosophy, the former of whom enunciated the same law in the negative form (vol. i, p. 10).

Ethical laws, for peculiar reasons residing in their exceptional application, have generally been laid down in the imperative instead of the indicative form. The early attempt, referred to in a previous chapter (*supra*, p. 283), to affiliate morals to religion, with the real object of lending weight to the latter, caused ethical investigators to present the results of their researches in the form of commands of superior beings, and this practice has continued even down to the ethical writings of modern times. This dogmatic form of publication, whatever may have been its superiority in former ages, doubtless tends at the present time to render ethical subjects repugnant to liberal minds; and moral-science writers would do a great service to the cause of morality if they would revise the entire code, and present it in the form of simple propositions, supported by the real proofs of their objective truth.

In the confusion referred to of religion with ethics, it is not to be wondered at that the line between moral doctrine and religious dogma should fail to be drawn, and that, as religious institutions changed, and the rules enforcing them became gradually eliminated from the moral code, certain of the least objectionable ones should cling to it, and be, to a greater or less extent, confounded with truly moral rules. A remarkable exemplification of this tendency is to be found in the so-called "Ten Commandments," or Hebrew decalogue. These ten injunctions are commonly supposed to embody all the fundamental moral precepts. They are thought of from their moral rather than from their religious aspect, and to violate any of them is regarded as committing a moral sin. But, if we examine them closely, we shall see that only six of them possess any ethical character at all—and one of these, the tenth, except in so far as it merely reiterates the substance of the seventh and eighth, is a *brutum fulmen*, being directed against a mental state instead of a form of action. The first four are purely religious, and liable to be different in different religions. Morality certainly has nothing to do with monotheism or idolatry, which are the subjects of the first two. The third forbids the vain use of the name of the particular deity worshiped by the Hebrews; while the fourth enforces the observance of the Hebrew Sabbath, a ceremony of that nation alone. The fifth enjoins filial piety, which is the primary principle of Confucianism. Right and proper within certain limits, it is certainly carried to damaging extremes in China, and probably in many other countries.

The appearance of this precept in so many authoritative moral codes has doubtless done much to render the popular understanding of the reciprocal relations of parents and children confused and illogical. Children are usually brought into the world through an act performed purely for the gratification of a sensual desire on the part of the parents, and without any thought whatever of the consequences. Under such circumstances the child could be under no possible obligation to the parents for any supposed sacrifice. The child is protected, nourished, and cared for by the parents through the operation of another slightly more derivative instinct, but not so derivative but that it is found in nearly all vertebrates and many invertebrates. If the performance of such acts requires a sacrifice, this is more than offset by the pleasure of gratifying this instinct. However valuable the life of a man may be, he can in no way be under any special obligation to those who, in obedience to blind natural forces, have been impelled to bring him into the world and preserve him to the age of self-dependence. A still greater inconsistency is often found in cases where those who believe most strongly in the debt of filial gratitude to parents hold at the same time that life brings greater evil than good. If such were the case, well might we weep at births and laugh at funerals. It undoubtedly is the case to a great extent, for every suicide demonstrates, in the most conclusive manner, that the life of the suicide was a grievous burden; and by no means all whose lives are equally unsatisfactory would reason out a remedy for the excess of evil, and balance their account of good and ill with sufficient accuracy to perceive that they were living at a loss. The mass of those of whom this is true live on from instinct, till welcome death affords them the needed relief.

The account of parents with their children is therefore quite decidedly against the former in the average case, and there is no doubt that, had the injunction of filial obedience been reversed and converted into an injunction of parental care and recognition of the rights of children, the effect upon society would have been far more salutary.

The remaining four commandments are aimed at some of the worst social evils, particularly the sixth, eighth, and ninth. The seventh forbids an offense against the conventional code, and tends to maintain a form of marriage common to most races, but by no means to all. In many, adultery is no crime, and indeed an impossibility, on account of a difference of custom relating to the sexual relations—a fact which shows that the crime is not intrinsic.

There are, therefore, really only three* of the "Ten Commandments" which have a necessary moral character, in the sense of being universally applicable to all men, whatever their religion or social customs. This affords a fair illustration of the ease with which pure ethics may be confounded with things that have no relation to ethics.

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*In reducing them to two (Matthew, xxii, 36–40), Christ really classified them on the basis of religious and moral, but there is no evidence that he did not regard the religious commandment as in the highest degree moral also.

Essentially moral sentiments deal only with the notion of *advantage.* In the stage prior to the fusion of morals with religion, as well as in the stage to come, when this fusion shall have disappeared, *right* and *good* must be regarded as interconvertible terms. The formula for all correct moral sentiments is: *The proposed action will result in advantage.*

In discussing this formula, there are two variants to be considered. The first is the scope or range of the advantage. The second is the reliability of the judgment. We will glance at both.

Scope of the Advantage.—Ideas, or opinions, differ from actions in having a wider field. The mind may entertain propositions which it is impossible for the individual to convert into action. Every thinking mind entertains ideas about the acts of others which can not be made the acts of self. Without enacting them, we all have our views as to what will be the effects of acts conceived as performed by others, whether they are right or wrong. While every one's own act must rest ultimately upon an egoistic basis, thoughts may be and are relatively far more altruistic. The advantage considered by the performer of an act must be egoistic, however altruistic it may also be. But the moral philosopher may remove the egoistic, or subjective, advantage from his contemplation entirely, and look upon actions in the abstract, with reference to their total advantage to all feeling their effects. In thinking about morals, all persons do this to a more or less marked extent.

Now, with increased mental development, the actor gradually approaches the stand-point of the thinker. In the lower types of mental organization, the egoistic, or subjective, advantage of an act is about the only view that has any weight in determining it. Advantage to self outweighs advantage to others, however disproportional they may real be. In higher types, objective, or altruistic, advantage is taken into the account along with subjective, or egoistic, advantage. Great objective disadvantage may neutralize certain degrees of subjective advantage, and prevent action. In the highest mental types, the altruistic view dominates the egoistic, and action depends chiefly upon its supposed influence in bringing advantage to others. Great men act as common men think.

It is in this way that philosophers have arrived at the idea of the "greatest good." It is the objective view alone. To the lowest type, the greatest good is pleasure to self, regardless of others. To the highest type, it is the greatest good to all, including self. Intermediate types act more like the lower, but think more like the higher types.

To the lowest savages, the idea of right is simply the idea of personal advantage. Whatever altruism exists belongs to the instinctive kind developed by natural selection for the preservation of the race.

Among barbarians, ethical ideas of the normal class exist to a limited extent. The notion of justice is perceptible, disconnected somewhat from that of personal gain. The range of the advantage thought of as following action extends beyond mere offspring, and takes in other relatives, and perhaps intimate friends. In half-civilized societies, objective justice is a well-developed sentiment, and may have received the sanction of laws. The range of the notion of advantage flowing from actions is extended to embrace all the members of the tribe or nationality.

In civilized societies, not only is justice reduced to a system and sought to be administered by the state—*i. e.*, by society itself—and the idea of advantage gained through action extended to all men, but the supra-normal, or supererogatory, conception of disinterested benevolence has been developed through the growth of the sympathies, taking the place to some extent of the grosser egoism of the "vivid series."

The progress through these successive stages of civilization, though doubtless due to the consensual development of all the psychic faculties, is chiefly brought about through that of the intellect and of intelligence attending intellectual growth. Among civilized races, the greatest differences exist between individuals and communities, as also between races themselves, in the range or breadth of their ethical conceptions. The supra-normal conception is confined to the most intelligent and most liberally enlightened classes. Only where there exists an active literature constantly appealing to the higher sentiments does any disinterested sympathy for mankind in the abstract prevail. Among the lower types of civilized communities, it makes no difference how many persons degrade themselves and throw their lives away by indulging in alcoholic stimulants, no public movements having the prevention of this evil in view will be set on foot. An apparently complete indifference will prevail on the subject. But in the higher types of civilized communities this fact makes a profound impression upon the public mind, and organizations are formed upon a large scale to reclaim the wayward and protect the young from temptation. This influence frequently makes itself so strongly felt as to control legislation and to secure the enactment of laws designed to accomplish the same end. Such laws, however, like most others, are usually based upon the prohibitory principle, and are for the most part inoperative.

The same truth is manifest with regard to most other forms of charity. Charitable institutions are chiefly confined to the most advanced civilizations. In some societies they are carried to extremes, and mendicancy and pauperism are fostered and increased by them. This is due to the advance of the sympathies at a greater rate than that at which the judgment advances, and may generally be traced to the undue emphasis given to the doctrine of alms-giving under a religious sanction, whereby it really becomes an egoistic sentiment.

Such altruistic sentiments as sometimes spring up in advanced moral societies and clamor for the abolition of some brutal practice, or of some institution regarded as productive of evil to helpless beings, appear to be among the purest and most disinterested impulses of human nature. Such have been the crusade against the slave-trade and that against slavery in general. It is only within a few centuries that such sentiments can be said to have had an existence in the world. They now only exist in the breasts of a comparatively few, but it is remarkable how much power these few have been able to wield. This fact is probably due to the sense of shame in those who are at heart indifferent to the proposed reform or even opposed to it, which causes them to acquiesce and let it go by default. The human mind naturally shrinks from the open advocacy of a palpable evil. Only strong interests in its continuance are sufficient to produce such advocacy.

The normal condition of the great mass of mankind, even in the most enlightened states, is one of complete indifference to the sufferings of all beyond the circle of their own immediate experience. In moral progress, almost as much as in material progress, it is a relatively insignificant number of minds that must be credited with the accomplishment of all the results attained.

Thus we have two distinct types of mind—the egoistic, which may be called the statical, and the altruistic, which may be called the dynamic. The egoistic, or statical, type of mind looks at things as they are, and has no thought of improving them. It is satisfied with the existing condition of the world and of society. It feels no desire to elevate the low to the level of the high, or to advance the latter still higher. Strong sympathies may, indeed, co-exist in such minds, but they are impulsive only, and extend no further than the concrete case which may happen to appeal to them at the moment. They are, moreover, irrational and capricious, and called out more by relative, or imaginary, than by absolute, or real, suffering, as where institutions are established for the purpose of maintaining the respectability of those who have once been wealthy. Persons who would give large sums to such objects would give nothing to educate the truly indigent. This class of minds can not be aroused on any moral question, and, while perhaps freely giving alms, would resist all legislation tending to render alms-giving unnecessary. There is here really little or no true moral sentiment, and appeals to personal interest are the only ones that are effective.

The dynamic type of mind, on the other hand, sees in every thing a potential superiority to its present condition. It demands the elevation of the low, not by alms-giving, but by education and enfranchisement, until no distinctions shall exist except those of actual native capacity to do and to be, and in many ways it agitates moral reforms for the future and the many where no direct gain to self is to follow.

Moral ideas increase in effectiveness in proportion as they approach the intellectual state. From mere physical instincts to high emotional sympathies, and from these to cold intellectual judgments upon moral questions, the advance is by a differential series. This is manifest in both classes of ethical sentiments.

With the expansion of ideas, moral actions pass from a special to a general character. General action is more important than special action. The latter is always attended with a too great intensity of emotional feeling, and only aims at certain obtrusive salient features of the evil in question. The former is deliberate, and strikes at the root of the evil, destroying it entirely. Attempts to enforce justice by coercion and appeal are only partially successful and not permanently successful. The administration of justice will never be thorough and complete until it is made self-regulative. This can not be accomplished by negative fiats and penal statutes. It may perhaps be accomplished by inventive legislation.

Considering, next, the supra-normal, or altruistic, class of moral sentiments, we may still more clearly perceive this truth. Promiscuous and unorganized charity is the least effective mode of relieving human suffering. All thinking minds see that, as a settled public sentiment, the belief in this duty is one of the great barriers to the object it aims to secure, as well as to still more important objects. Small charitable schemes, while often beneficial to the recipients, are at best only temporary alleviations, and affect only the surface of the evils which render them necessary. Philanthropy which aims simply to mitigate actual suffering, contributes only slightly to that end. Before it really becomes effective, it must take the more general form of *humanitarianism.* Charity must consist in something broader than the mere satisfying of hungry stomachs, which will only remain satisfied a few hours. Humanitarianism aims at the reorganization of society, so that all shall possess equal advantages for gaining a livelihood and contributing to the welfare of society. The truest philanthropy is that which sees and declares that it is society that is the principal loser when its members are unemployed, and, laboring for the good of society as a whole, it secures to the greatest degree the good of its needy members. Whenever this sentiment shall generally prevail, most of the worst social questions will quickly solve themselves.

Reliability of the Judgment.—We will now consider the second variant in the general moral formula, viz., the reliability of the judgment.

Morality rests ultimately upon intellectual capacity and general intelligence. For, as we saw (*supra*, p. 349), conscience is far from an unerring guide to right conduct, and conduct will depend, in the rightness of its results, upon the soundness of the views which men hold upon moral questions in general. If every act were right which any one believed to be right, the problem would be comparatively simple. If all men agreed, and all ages had agreed, respecting what constitutes the right, we might safely infer that the moral judgment of mankind was worth listening to. But such is far from being the case. Not only do men of the same epoch constantly differ about the most important moral questions, but one age reverses the decision of another, and every year sees the overthrow of moral ideas which had been cherished from immemorial antiquity. As Dr. Carpenter pointedly remarks, "Those who are able to look back with intelligent retrospect over the political history of the last half-century, and who witness the now general pervasion of the public mind by truths which it accepts as self-evident, and by moral principles which it regards as beyond dispute, can scarcely realize to themselves the fact that within their own recollection the fearless assertors of these truths and principles were scoffed at as visionaries or reviled as destructives." *

There are many causes for these variations in ethical opinion, but the greater part of them may be arranged under three general heads, which we will designate as follows:

1. Varying power to discern moral quality in action.
2. Confusion of religion with morality.
3. Confusion of custom with morality.

Moral Discernment.—The first of these has already been touched upon when speaking of the scope of advantage conceived as flowing from action. In this case, the change occurs for the most part in one direction, and constitutes what is called the progress of moral principle.

In advanced societies at the present day, the basis of moral conduct is the human race in general. Scarcely any one, if asked whether an action, which was considered wrong when committed against one man or class of men, could be right, *ceteris paribus*, if committed against another man or class of men, would now give any but a negative answer. But this has not always been so, and is so now only in civilized races. We need not go back to barbarous ages to see this fully exemplified. In ancient Greece, the most cultured nation of antiquity, there was one code of morals for the

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* "Mental Physiology," p. 485.

Greek and another for all other nations. "The stranger, the alien, the enslaved captive, the barbarian of the non-Hellenic world, were not human fellows to the Greek; at most, they were only human creatures of some different variety, having that similitude, and approaching somewhat to that relation, but quite excluded from his cognition of fellowship by all the habits of his feeling and his thought. According to his perception, they were clearly proper subjects of predatory warfare and piracy; he could kill them, plunder them, enslave them, with no more compunction of conscience than the modern hunter feels in capturing or killing the game-animals of the forest. And yet the same conscience was acting in the Greek that acts in men to-day; but only with more narrowness of range in the perceptions upon which it acted." *

The Hebrew nation also had two codes of morals which divide off with trenchant lines at many points in their recorded laws and history. "To the Jew *first* and also to the Greek" was even in that late day regarded as a large departure from accepted principles, and Christ's recognition of Gentiles constitutes one of his leading offenses. The system of slavery which prevailed among the Israelites dealt very differently with the Hebrew and the Gentile slave. For the latter, there was no "year of jubilee," as for the former. A careful study of the early history of every nation shows that this characteristic of a dual morality has been common to them all at one period, and has only been removed by the progress of intelligence and mixture with other races.

While this system of tribal distinction no longer exists among civilized races, a relic of it survives in the marked inequality of social condition, and the difference of treatment corresponding to it. Many persons of fine sensibilities toward those of their own rank present a supercilious and heartless bearing toward those of an inferior rank. This spirit is cultivated in Europe, so that one of the most obvious marks of a foreigner in America is this duality in his character and conduct according to the rank of the person addressed; and in this country, where social inequalities are very fluctuating and depend on wealth or accidental position, the attempts of foreigners properly to distribute their two sets of actions often become very amusing.

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* J. N. Larned, in "Popular Science Monthly" (1877), vol. xi, p. 559.

In general, it may be said of this group of varying principles that the advance effected is in proportion to the ability correctly to measure the advantage to flow from the given class of action, and therefore morals progress in unison with the progress of intelligence. Where essentially immoral practices are sanctioned by the code of a people, such as murder, lying, theft, robbery, etc.,* it is due to a complete failure on the part of such a race to measure the good and evil in conduct, a false and perverse or a dwarfed and stunted moral perception and mental condition. It may be depended upon that, when a people fairly realize that they are opposing their own interests, a revolution, not only of thought but of action, will take place. The progress of moral principles in society consists of a series of such revolutions brought about through this cause.

Confusion of Religion with Morality.—The cases in which religion has been confounded with morality constitute by far the most numerous class of variants in ethics. The great number of different religions, having different forms, rites, and ceremonies, renders this necessary. The most purely moral systems, such as those of Confucius and Menu, contain much that is religious only. The mixed moral and religious codes that have come down to us from various nations have produced great confusion in men's notions of right.

We have already seen that the Hebrew decalogue contains four purely religious injunctions and only three purely moral ones. If we were to examine the entire code of accepted morals prevailing in civilized communities, we should probably find a similar proportion of the non-essential mixed with the essential. "Of the seventy-three chapters constituting the rule of St. Benedict, nine concern the moral and general duties of the brothers, while thirteen concern the religious ordinances. And how the idea of criminality attached to disregard of ordinances is proved by the following passage from the rule of St. Columbanus: 'A year's penance for him who loses a consecrated wafer; six months for him who suffers it to be eaten by mites; twenty days for him who lets it turn red; forty days for him who contemptuously flings it into water; twenty days for him who brings it up through weakness of stomach; but, if through illness, ten days. He who neglects his Amen to the Benedicite, who speaks when eating, who forgets to make the sign of the cross on his spoon, or on a lantern lighted by a younger brother, is to receive six or twelve stripes.'" * No doubt these forbidden acts were then regarded as highly immoral. It has been the same in other parts of the world. Among the Sandwich-Islanders, "if any one made a noise on tabu-day, . . . he must die." In Peru, "the most notable sin was neglect in the service of the huacas." With the Nicaraguans, it was to break a festival. The Hindoos, who would not scruple to tell lies, would die sooner than eat the flesh of certain animals condemned by the sacred books. The story of the homicide who confessed to killing a fellow-man for his dinner, consisting of bread and meat, and who ate the bread but threw the meat away because it was Friday, whether true in fact or not, is not an overdrawn illustration of the confusion that exists in society respecting right and wrong. But in this class, as in the one previously considered, all true moral progress consists in the elimination of non-essential doctrines, and the greater and greater recognition of the value of those whose practice is followed by positive advantage.

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* Spencer, "Data of Ethics," p. 39.

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* Spencer, "Ceremonial Institutions," p. 11, § 344.

Confusion of Custom with Morality.—Custom has been almost as potent in distorting conceptions of duty as has religion. Oftentimes the two are inextricably blended. The most marked cases under this head relate to the condition of the sexes. Among the Hindoos, the marriage of adult females is regarded as highly immoral, and it is said that monogamy, as enforced by Christianity, is the chief obstacle to the spread of that faith among them, as they regard it as an immoral mode of treating women. Cato, a noble Roman, yielded his wife to a friend. Socrates saw nothing wrong in the prostitution of Aspasia. In the Balearic Isles, a bride was the common property of all the guests before she could be the wife of one. Among the Naudowessies, the woman who could take to her bosom forty stalwart warriors of a night was regarded almost with veneration, and had her pick for a husband.[*] Among the Tongans, according to Pallas, "marriages were terminable at the will of the husband, and, excepting in married women, chastity was not regarded as a virtue."[†] It is a remarkable fact that loose conduct between the sexes, which is commonly regarded as the worst form of immorality, seems to have no influence whatever upon the essential moral condition of those races among whom it prevails.[‡] Thus, of the race last mentioned, it is said: "Yet we are told that, on the whole, this system, although opposed to our feelings, 'had not the least appearance of any bad effect. The women were tender, kind mothers, and the children were well cared for.' Both sexes appeared to be contented and happy in their relations to each other, and, 'as to domestic quarrels, they were seldom known.'"[#]

There are, of course, many other illustrations of this mistaking of custom for duty besides those connected with the sexual relations, but these are not only the most abundant but also the most interesting, since they give the civilized world a hint that the greater part of its code of morals is not intrinsic but factitious, and that many of the forbidden acts are *mala prohibita* only and not *mala in se* (vol. i, pp. 632 *et seq*).

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[*] Carver, "Travels through the Interior Parts of North America" (London, 1779), pp. 245, 246.

[†] Lubbock, "Origin of Civilization," p. 259.

[‡] Spencer, "Sociology," vol. i, pp. 638, 639.

[#] Lubbock, *loc. cit.*

Without going on to enumerate other instances under this head, it may suffice to point out that, in general, great confusion exists between the moral and the conventional code. The disagreeable sensation which comes over a person when conscious of having violated a rule of social etiquette, though scarcely less cutting to the sensibilities, appears, in the most extreme cases, to be plainly and generically distinct from that which he experiences when conscious of having violated a rule of ethics. Yet between them there exists a certain gradation until the distinction at last disappears. The only test in such cases is to determine if possible whether injury has really been done to any one, a test which is usually very difficult of application.

The conventional code, like the moral code, exists for an object, and this can be no other than the good of society in both cases. It is manifestly for the good of society that things be done in a proper manner, and this can only be accomplished by *fixing* the order in which they are to be done. He who violates this order really injures the interests of society. This, at least, is the theory of the conventional code, and serves to show how it approaches, in its fundamental features, the moral code. But in point of fact the greater part of the customs and fashions of the world not only do not subserve the good of society, but tend very visibly in the contrary direction. This, however, is due to man's defective judgment and general imperfection of mind and character. To sift the wheat from the chaff in this mass of crude material is the work of the sociologist. To distinguish the intrinsic from the extrinsic, that which really brings advantage from that which brings no advantage or brings disadvantage, is one of the living problems of true moral science.

The foregoing analysis of ethical opinions may appear more extended than its importance demands, but the many misconceptions and errors in which the subject is involved rendered necessary a fuller treatment than would have otherwise been sufficient.

DYNAMIC OPINIONS.

Human efforts are always exerted with a view to accomplish some end regarded as in some way advantageous. When such efforts are deliberative, they obey states of mind which represent the advantage to the individual in advance. These states of mind are of various degrees of complexity, but may generally be resolved into simple propositions, either flowing from other propositions (conclusions from premises) or standing alone, apparently disconnected from simpler states, but really the result of a multitude of special conceptions of which it is impossible to take account separately. Assuming the ends of conation to be what they are supposed to be, viz., advantageous, the great desideratum of life is to be permitted to act in the manner prompted by the states of mind. This branch of the subject was considered in the preceding chapter. We have now to deal with the states of mind themselves. It is notorious that in a great number, perhaps in a majority of cases, the end is so dimly perceived, or so grossly misconceived, that action, where free, brings no advantage, or even brings disadvantage (*supra*, pp. 91, 92). Or, if the end be correctly perceived, the manner of trying to secure it proves wholly ineffectual, and no result is reached. If, therefore, liberty to act is of so vast importance when so many acts are fruitless or injurious, how much more important must be the possession of such states of mind as will render the aim of action certain, and action certain of its aim! The failures attendant upon human effort are due to the lack of correspondence between thoughts and things.* The establishment of such correspondence must therefore precede the establishment of complete liberty to act, if the highest advantage is to be secured. Not only must opinions be correct in this sense, but men must entertain the right kind of opinions in order to achieve this success. Every mind is constantly thinking about something. The millions of minds in millions of men have each millions of thoughts in the course of a life-time. But this vast mass of ideas is for the most part worthless, not because it is not vigorous, but because it is not organized, not concentrated. Where it is not out of harmony with all objective reality, it is out of the line of utility, shooting away after some glittering tinsel, or *ignis fatuus*, following some freak of fancy, riding some petted hobby, or wrapped up in some vain delusion.† The only opinions which are of any value to the world are those which promote its progress either directly or by preserving order as the guardian of progress. The latter are the ethical opinions freed from the dross of superstition and convention, and recognizing only positive utility. The former are dynamic opinions properly so called, with which we have now more especially to deal.

Dynamic ideas are necessarily directed toward, and concerned with, the phenomena and laws of nature. As already frequently remarked, civilization, in so far as real, is essentially artificial; it consists in the control and direction of natural forces into channels of human advantage. It rests upon ideas, both true and practical, of the relations existing among natural objects and the character of natural laws. It will, therefore, be convenient to classify these ideas in the same manner as we would classify the sciences, and to consider them in connection with the successive great divisions of the scientific hierarchy. We will thus pass rapidly in review the following classes of ideas:

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* Comte, "Philosophie Positive," vol. vi, p. 663.

† C. S. Peirce, in "Popular Science Monthly" (1878), vol. xii, p. 289.

1. Cosmological ideas.
2. Biological ideas.
3. Anthropological ideas.
4. Sociological ideas.

COSMOLOGICAL IDEAS.

Whatever may be the future of human civilization, it must be confessed that thus far progress, considered as consisting in either actual or potential increase in the means of enjoying life, has been chiefly material. Man is "of the earth earthy." He inhabits a material planet, is bound to it by a physical law, subsists on material objects existing upon it, and is himself an integral and purely material part of it. His intimate relations with matter make it of the utmost importance that he know all about matter. At every turn he encounters it in one form or another, and experience has shown that such contact is either beneficial or injurious according to the views he entertains of his relations to it, and of those which the various forms of it sustain to one another. It is reserved for the next chapter to consider the basis of his opinions; the necessity that they be both sound and practical is what here requires special emphasis.

First, in order to live in the most advantageous way, sound views of the material universe must prevail. So long as man's conceptions of the universe are erroneous, he will pursue a wayward if not a downward course. If they are too narrow, and he believes that all existing things are within the range of his vision, his conduct will be correspondingly narrowed. If he believes the world of short duration, both in the past and in the future, this too will dwarf all his undertakings, and make an end of progress. If he regards nature as consisting of a multitude of animated powers impending over him, he will waste all his energies in seeking to propitiate these powers. If he deems them evil, terror will demoralize him and make life a burden. If he conceives the universe to be watched over by beneficent powers, he will be apt to resign all initiative effort to them, and relapse into a condition of complete stagnation. It is difficult to say which exerts the greater demoralizing and anti-progressive influence on man, pessimism or optimism.

In the second place, there must exist just and adequate views respecting the particular objects of the universe. The stars, the sun, the earth itself, must be valued at something like a true estimate. It is better to believe the "moon to be made of green cheese" than to fail to regard it as a piece of matter at all. Opinions respecting the constitution of the sun, which embody the latest data for concluding upon that question, exert a powerful dynamic influence when substituted for the idea that it is a god. Proper conceptions of the relative magnitude of the sun and earth help immensely to tone down human arrogance and to make men behave properly. Some may smile at such a statement, but they need only to remember that, down to the time when this and other kindred truths were forced by science upon the world, the most moral and enlightened men in the most advanced portion of the earth were decreeing the torture and execution of their fellow-men for disbelief in certain doctrinal tenets not possessing the least intrinsic merit; and scarcely any one now doubts that the immense liberalization of the world which has taken place during the last three centuries has been chiefly due to the expansion of men's views rendered possible by the discoveries of science.

In the third place, before mankind can be infused with a progressive spirit, definite opinions must prevail respecting the origin and development of the universe. The idea of fixity in the object produces the condition of fixity in the subject. The idea that the world has been evolved out of a less differentiated state of its materials, that it is itself a chip from the enormously greater central mass, and that this mass once extended to the earth's orbit and to those of the remoter planets—these ideas are grand and inspiring, and give the mind an irresistible impulse to move with the general tide of progress. It may be said that this is not proved. If so, it probably never can be, though most astronomers think that it is. But, even if it be not demonstrated, it is one of those conceptions, true relatively to the age, that satisfy the progressive cravings of the mind, and when fairly appropriated elevate and improve character, and it is not knowlledge, but opinions, that we are now considering.

Lastly, the relations of the nearer objects with which men come into immediate contact, their physical properties and susceptibilities, must be rightly viewed before progressive action can follow. It is through just conceptions of this class that all material progress comes. The indirect, or inventive, method of procedure is only adopted in cases where all supernatural views are discarded, and true natural relations are perceived. The influence of knowledge is through the ideas it generates. Knowledge is chiefly useful as furnishing the data for thought, just as thought is chiefly useful as furnishing the data for action. It is the laws deduced, the generalizations made, the conclusions drawn, the opinions formed, that count in social progress. It is not essential that men's views be completely settled in society. It is only essential that they be objectively true. One man, though alone in the possession of a truth, wields a power. It is unavoidable that many of the advanced views held by advanced minds shall be disputed; they will nevertheless be progressive if objectively true. The belief in the genesis of inorganic substances, instead of exerting a bad influence, is an aid even to the practical work of mechanical invention. He who must deal with matter and force must possess a grasp of their nature and enlarged views of their possibilities. The fixed conviction that the chemical elements are the ultimate divisions of matter is as great a barrier to the advancement of chemical science as the fixed belief in the Mosaic firmament was to that of astronomy. The successful inventor must place himself completely *en rapport* with nature. He must not only possess the settled truths of verified science, but must be capable of duly weighing all unsettled theories of the universe. With no other profession is dogmatism, of whatever form, so wholly incompatible.

BIOLOGICAL IDEAS.

All men entertain biological views, though they may not recognize them by that name. The backward farmer, who plants his potatoes in the dark of the moon, has a conception relating to the laws of plant-growth, albeit there exist no physical relation between its terms. The more enlightened one, who makes a pecuniary sacrifice in order to plant the choicest and best, has grasped in a rude form the great principle of heredity, so fertile in practical advantages to man. All that makes cultivated plants and domesticated animals superior to the native floras and faunas of the world, has been the result of a half-unconscious recognition of this law. What is to follow from a few centuries of its full recognition and practical application can not now be predicted. But, though the law of artificial selection is now to be ranked among the verified truths of science, the unpardonable defectiveness of the present methods of distributing intelligence confines its full realization to a small number of persons, who are, moreover, generally in no condition to put it to any practical use. The great mass of those whose business it is to deal directly with the organic world, and supply the human race with the nourishment which is there elaborated for its use, are left destitute of nearly all the ascertained truth which could be made available for the advancement both of their interests and of those of society.

Aside from such paramount practical considerations, there are theoretical ones in the domain of biology which possess a high moral if not a true material value. Such generalizations as were presented in Chapter IV, by which the unity of the organic and inorganic kingdoms was made to appear through a systematic co-ordination of the verified facts and truths of both sciences, help the mind to comprehend the relations of dependence which exist in the universe. It is of the utmost importance that such relations should be understood, not only because it is possible in many ways to turn them to practical advantage, but as a part of the general scheme of orientation by which man fixes his own place in the universe, and rids himself of the incubus of supernatural beliefs.

ANTHROPOLOGICAL IDEAS.

The principal progressive anthropological opinions are those which relate to man's origin and nature, to his relations to the other objects of the universe, and to his physical improvement. For the first of these it must suffice to refer the reader to Chapter VI, and for the second to Chapter VIII. The third, which was briefly touched upon in the last chapter (*supra*, p. 392), deserves some further notice.

Artificial selection, now a settled principle in biology, must be applicable in its length and breadth to the human race. Its extension to man is chiefly rendered difficult because it requires him, as it were, to sit in judgment on his own case. When a man selects the finest of his animals for breeding purposes, he judges objectively what qualities are most useful. But with human beings there is no umpire to settle this question. Yet no one doubts that there are immense differences in the usefulness of different individuals. If the opinion could generally prevail among all classes that the human race could be rapidly improved, both physically and mentally, by the intelligent selection of those who are to keep up the population, much of the difficulty would remove itself.

There are two ways in which a modified stirpiculture might be gradually inaugurated. One consists in the silent influence which correct views on the subject would produce. As already remarked some pages back, the sexual relations constitute the subject as to which the greatest confusion exists between the conventional and the moral code, and the greatest variety of customs respecting their observance.

The present customs by no means embody the greatest purity of life, or bring out the highest moral sentiments, and the apparent tenacity with which they are clung to only indicates their weakness—dogmatism being always most intense when least rational. The apparent firmness with which the current maxims relative to marriage are defended, therefore, only indicates that the system is liable to a revolution. But, in order to render a modified form of stirpiculture possible, this revolution need be but slight, and need not sweep away any thing essential to the ethics of the sexes. It is altogether probable that in a highly enlightened community, fully awake to the value of restricting propagation to those physically and mentally worthy to exercise it, custom alone would soon prescribe the course of conduct in this respect which would secure the greater part of the ends of a systematic stirpiculture. To realize the possibility of this, we need only consider the views now held respecting incest. Why do men look with such feelings of disgust upon this crime? In many countries it is no crime. Among animals no instinct exists, so far as known, adapted to prevent it. The fact that through rare coincidences men have sometimes been known to fall in love with their sisters, without knowing the relation, proves that the sentiment is not instinctive. Admitting that persons of delicate sensibilities would naturally look upon such practices as too familiar and would discard them, it is still probable that a dim consciousness that it results in degeneracy has been coupled with this natural abhorrence. The horror of incest in civilized society is undoubtedly a survival of savage customs which are almost universal, and are the necessary result of the conditions under which social institutions have developed. Strict as advanced races are in prescribing the limits of consanguinity within which marriage may take place, they are still far less strict than are the less advanced races. Here marriage is forbidden within a large group, the *gens*, and the violation of this custom is looked upon as the most heinous of all crimes.

Major Powell says:[*] "Of crimes resulting from the regulation of the relations of the sexes, marriage within the proscribed group is held to be the most heinous in primitive society. It is never condoned, never compounded." But, whatever the cause, custom so completely inhibits too close consanguineal unions, that not only have they been made the object of legislative prohibition in most countries, but they could not be practiced to any damaging extent were there no laws relating to them. Now, if we suppose an equally strong repugnance to exist to the marriage of consumptives, or persons affected with any hereditary disease, or of those whose pedigree was known to be tainted with insanity,[†] the worst features of the present system would be removed without further action. But custom might, and doubtless would, soon go much further. Suppose it were regarded as a disgrace for a married pair to rear more than two or three children. In an ignorant community this could not be enforced, but in a sufficiently enlightened one it could and would be. The opposite article of the present code, which makes it an honor to rear a large family, is tacitly violated by intelligent people, but enforced by the ignorant and the poor, a state of things which powerfully counteracts all efforts to enlighten the masses. If there is one social phenomenon which human ingenuity ought to bring completely under the control of the will, it is the phenomenon of procreation. Just as every one is his own judge of how much he shall eat and drink, of what commodities he wants to render life enjoyable, so every one should be his own judge of how large a family he desires, and should have power in the same degree to leave off when the requisite number is reached. What society needs is restriction of population, especially among the classes and at the points where it now increases most rapidly.

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[*] "Outlines of Sociology." Annual address of the President of the Anthropological Society of Washington, delivered February 7, 1882. ("Transactions," vol. i, p. 126.)

[†] As illustrating the utter indifference that prevails on this subject at present, and the tendency to regard the human race as entirely outside the domain of biological laws, Dr. Henry Maudsley quotes from a work in which the author says: "I actually know a man who is so deeply interested in the doctrine of crossing, that every hour of his life is devoted to the improvement of a race of bantam fowls and curious pigeons, and who yet married a mad-woman, whom he confines in a garret, and by whom he has insane progeny." (Lecture delivered at University College, London, October 2, 1876.)

In human beings, value does not reside in numbers but in quality, and quality can only be attained in two ways: 1, by selection of parents; and, 2, by education of children. In the present state of society, neither of these ends is attained. Those who are able and willing to educate their children feel that population is increasing too rapidly, and decline to contribute to it; while those who contribute most to the increase are neither able nor willing, through poverty and ignorance, to educate their children. Were the social code reversed in these respects, the facts would be reversed, and we should have a modified form of stirpiculture resting on custom alone.

The other method by which this end might be attained is through legislation. It is a mistake to suppose that there can be no effective legislation on social questions. We have already seen that in nearly all nations incest is prohibited by law. In nearly all monogamous countries, bigamy (and this includes polygamy) is forbidden. In many of the United States, inter-racial marriages are penal offenses. Such laws are as successful as most laws of this prohibitory type. If the acts committed can not be prevented, their public performance can be, and they are converted into crimes, to be perpetrated secretly. This, it is true, is often worse than open license, but it is the efficacy of human legislation rather than its wisdom that we are considering. About all that can be said in favor of prohibitory legislation is that it sometimes seems to lead public sentiment a little beyond what it would sanction in itself. When a people are about ready for a change, but tardy in inaugurating it, a legislative sanction precipitates it. It might do this for stirpiculture. If the social code hesitated to forbid marriages between persons physically unsound, the legal prohibition of such marriages would greatly aid their prevention. But prohibitory legislation assuredly could do very little beyond this, and, if any thing else can be done by legislation, it must be by legislation of the opposite class, viz., attractive legislation. Here the theoretical possibilities are immense. What men can not be made to do, they may often be easily induced to do. Whatever the legislature sees to be desirable for them to do, it should devise the inducements which shall make it for their interests to do, and it will certainly be done. The common-law principle that laws in restraint of marriage are void belongs to this class, but the object sought is one of those arbitrary, half-conventional dogmas whose utility is doubtful.

SOCIOLOGICAL IDEAS.

The highest type of dynamic opinion is that respecting society. After dynamic opinions of the universe, of life, and of man have been formed, it is easy to rise to the position from which society can be contemplated as progressive and subject to a central control. The duties of society toward itself are manifest enough so soon as its true character can be understood. Given correct ideas of what it exists for, of the nature of progress, and of the office of individual and social action, self-interest alone will dictate the course to be pursued. But this assumes full consciousness on the part of society in its corporate capacity. The great problem remains how to bring society to consciousness. Assuming it to have been brought to consciousness, the dynamic truths with which it must deal are comparatively plain. The mouth-piece of a conscious society is the legislature. If dynamic opinions prevail there with sufficient force to control it, the systematic improvement of the social estate will take place very nearly in proportion to the degree of wisdom brought to bear upon it. The methods to be adopted in order to secure this result have been explained so often that no time need be here devoted to their further elucidation.

CONCLUSION.

There exists one point at which ethical ideas and dynamic ideas closely approach each other, if they do not actually meet. We saw, a few pages back, how moral ideas increase in effectiveness in proportion as they grow more intellectual. From mere impulse to true sentiment, and from sentiment to reason, are the psychic steps corresponding to the series of benevolent acts which lead from promiscuous alms-giving, through the expanding systems of charity, to the broadest forms of philanthropy and deep-laid schemes of humanitarianism. But from humanitarianism it is but one more step in the same direction to *meliorism*,* which may be defined as humanitarianism *minus* all sentiment. Now, meliorism, instead of an ethical, is a dynamic principle. It implies the improvement of the social condition through cold calculation, through the adoption of indirect means. It is not content merely to alleviate present suffering, it aims to create conditions under which no suffering can exist. It is ready even to sacrifice temporary enjoyment for greater future enjoyment—the pleasure of a few for that of the mass. Much that passes for philanthropy and charity it declares to be injurious to society, as tending to preserve and perpetuate those who are naturally unfit to survive. It would break over the barriers of sympathy and sentiment, and consider only the end-result. It employs the indirect method of attaining this end, works through inventive strategy, aims to control natural forces, and in all respects simulates the spirit of true science.

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* The language seems to be indebted to George Eliot for this much-needed word, and, if it is employed here with a slightly different shade of meaning from that which she originally assigned to it, it is at least one which is not only not supplied by any other word, but one which is in harmony with its etymology. (See "Pessimism: a History and a Criticism," by James Sully, London, 1877, p. 399.)

These two great classes of ideas thus seem, while widely separated in their lower, to converge and coalesce in their higher, stages. They at first seem to reverse the normal course of evolution, but, upon a closer inspection, the process is perceived to consist in a sort of *integration* of the parts of the general system of ideas into a consistent whole.

CHAPTER XIII.

KNOWLEDGE.

IMMEDIATE DATA OF IDEAS, OR FOURTH PROXIMATE END OF CONATION.

The data of thought—Composite character of intelligence—Two influential popular errors—Dangers of pure intellectual activity—Relative claims of intellect and knowledge upon culture—Explanation of the fact that the capacity for knowledge has always exceeded its amount—Relative ease with which intellect and knowledge may be increased—The two legitimate modes of increasing intellect—Chasm between the knowledge extant and that possessed by the average mind—*Résumé* of the preceding considerations—Experience as the vehicle of knowledge—Laws of the mind in arriving at certainty—Aid rendered to intellect by knowledge—Qualitative increase of knowledge—What knowledge is most important—Generality as a test of importance—Practicality as a test of importance—Scientific and unscientific knowledge—Co-ordination of the present with the two preceding chapters—Ethical knowledge—Dynamic knowledge—Principles of certitude—Limits of absolute certainty—Doctrine of innate ideas, or necessary truths—Deductive and inductive knowledge—The senses as the primary source of all knowledge—Testimony as a mode of diminishing the degree of certainty—Nature of scientific knowledge—Distribution of knowledge—Legitimate effect of the existing inequality in the distribution of knowledge.

In the four preceding chapters we have seen that human progress, measured by the degree of happiness conferred, has been accomplished altogether by appropriate human actions, dictated by rational thoughts. We have now to inquire into the nature of the causal antecedents of thoughts themselves. Men can not think rationally by merely wishing to do so. Thought is the product of the psychological machinery. It will correspond to the general character of the mind, and can be neither better nor worse than the mind. We have, therefore, really to consider here the nature of the thinking mind, not exactly from the physiological or psychological standpoint, but from a higher and more practical stand-point. We must consider it as objectively affected, not merely in itself, its normal processes, but in connection with its environment, and as itself modified, conditioned, and, as it were, charged with all the influences of the surrounding and impinging world.

Instead, therefore, of saying that the character of human ideas depends upon the character of the mind, we must say that the value of thought depends upon the degree of *intelligence.* At first blush, this proposition may appear to be nearly identical with the other, but we shall soon see that the difference is immense.

In order to perceive this, it will be necessary to analyze the word "intelligence." A glance shows it to be compound. It is clearly not equivalent to "mind," which embraces the feelings and the intellect; neither is it equivalent to "intellect," which is the objective branch of mind, and yet its connection with intellect is obviously close. Intellect is involved in intelligence, but something else is also involved in it. What, then, is this additional ingredient? Evidently it is the *product of intellection.* Intellect coupled with the product of its operation constitutes intelligence. The objective character of the intellect suggests that it is engaged with external objects. Its legitimate work is the cognition of such objects. Once cognized, an object becomes an intellectual product. This product may be technically spoken of as a cognition, or it may be more familiarly called knowledge. Intelligence, therefore, implies not only the degree of intellectual power employed, but the amount of labor actually performed by this power; it is intellect *plus* knowledge. Intellect has been very appropriately styled the *co-efficient of intelligence.*

There are several other terms which are partially synonymous with either intellect or intelligence, which may be briefly noticed in passing.

The notion conveyed by the word "genius" differs from that conveyed by "intellect," in denoting a special application of the latter, or specialized power in certain directions, and so called "geniuses" always manifest a greater or less degree of inequality among the faculties of the intellect, or intellectual one-sidedness. Where the excess is in the direction of inventive art, this one-sidedness is frequently of great value to civilization.

The notion involved in the word "talent" is much nearer to "intelligence" than to "genius." It is intermediate between the two, but conveys more strongly the notion of intellectual power than quantity of knowledge. "Wisdom," on the other hand, while involving both intellect and knowledge, places more stress upon the possession and proper application of knowledge.

Before proceeding further, it may be well to name the two fundamental popular errors which stand most in the way of the realization of an artificial social progress, and, more than any other of the opinions of mankind, tend to retard social advancement. These are: 1, overvaluation of intellect, coupled with undervaluation of knowledge; and, 2, overvaluation of the origination, coupled with undervaluation of the distribution, of knowledge.

The second of these errors will form the subject of the latter portion of this chapter. The first will be appropriately considered here.

It may seem inconsistent to condemn a social state as artificial while alleging that it has been brought about by undirected nature, and at the same time to appeal to artificial human agency to restore the natural state. Yet this the dynamic sociologist is compelled to do, and on closer examination the apparent inconsistency will disappear, and it will be perceived that, though a paradox, it is nevertheless an important truth that the tendency of the unaided and unguided social forces, or these forces guided by intellect alone, is to carry man away from nature, and make him a prey to all forms of erroneous conceptions, absurd notions, and pernicious practices; while at the same time the only power to which he can appeal for the removal of such artificial excrescences and dangerous social diseases to which intellectual action gives rise is intellect itself. Mind has created them, and mind alone can abolish them. But here lies a second paradox, or rather the fundamental truth that underlies the first. The natural mind produces artificial results; the artificial mind produces natural results. The natural mind is the crude intellect unprovided with facts and truths—intellect *without* knowledge. The artificial mind is the intellect stored with natural truths and real facts — intellect *with* knowledge. Both operate logically and rationally, but arrive at diametrically opposite results. The former appears blind and unconscious, the latter acts with foresight and a full consciousness of its aims. After all, there really is no natural or artificial. Only one ultimate criterion exists, viz., the test of advantage. From the moral point of view, *i. e.*, the point of view of every sentient being, that only is natural which brings benefit, and every principle of the so-called laws of nature must and should be violated to insure this end. Civilization consists in the wholesale and ruthless trampling down of natural laws, the complete subordination of the cosmical point of view to the human point of view. Man revolutionizes the universe, and makes Feeling, instead of Being, the criterion of the Natural. The essential function of Knowledge is to aid him in accomplishing this revolution.

The conscious efforts of society to improve its condition may be directed toward either of the two following ends: 1, to increase the amount of intellect; 2, to increase the amount of knowledge.

As before remarked, the real end sought is the increase of intelligence, which, as we have seen, consists in the combination of these two subordinate ends. But intelligence, from its compound nature, can not be acquired as such. It must be acquired either as pure intellect or as pure knowledge. These can no more be administered in their combined form than flesh and blood can be administered in their complex state directly to the body. But, given a certain amount of knowledge, an increase in the degree of intellectual power produces an increase in the degree of intelligence; or, given a certain amount of intellectual power, an increase of knowledge also produces an increase of intelligence.

The question, therefore, becomes simply a practical one. Which is it more profitable to expend energy in trying to increase, intellect or knowledge? or, if both, upon which should the greater amount of energy be laid out? The answer to this question depends upon two conditions.

The first is the relative necessity or importance of the accomplishment of these two objects; the second is the relative ease with which they may be accomplished.

When we reflect that the chief character by which man is distinguished from other animals is his superior brain-development, and that, until this reaches a certain point (the minimum being usually placed, though roughly, at sixty-five cubic inches of encephalon), no amount of instruction can raise him above the animal plane, the *absolute* necessity and importance of intellectual increase below and at this point is of course obvious to all. Moreover, for any useful degree of social advancement, there can be no doubt that increase to a considerable distance above this minimum point is absolutely essential. What to say of the several savage tribes now inhabiting the globe can not be determined until more is known of their real intellectual condition; and, although this doubtless differs immensely in different tribes, it is probable that they must still advance considerably by the spontaneous methods of development before they arrive at the stage at which a systematic social fabric can be erected. In all barbarian and half-civilized nations it is highly probable that the basis exists for a much higher degree of intelligence, and that all that is wanting to take them out of those ethnological categories and place them alongside of so-called civilized nations is simply to augment their general fund of information to a point much nearer the limit of their capacity for receiving it.

When we come to the consideration of civilized nations from this point of view, it becomes obvious that here also the capacity for knowledge is far in advance of the knowledge possessed. This is proved in a great variety of ways. The number of great men that succeed, against the powerful obstacles which society presents, in rising from obscurity, shows that in the lower ranks of life the native intellectual power is nearly as great as in the higher. Through the countless reverses of fortune which society is perpetually undergoing, even in the Old World, it is impossible to prevent much sterling blood from percolating through the entire mass; and the ruder habits of life in the lower classes tend to prevent the degeneracy of genius which goes on so rapidly amid the luxuries of the higher. The condition of the European race is such now that in point of average capacity there is probably, except in isolated localities, no distinction in the different ranks or social stations of life. An equal number, selected wholly at random from among the lower, middle, and higher classes, would, if placed under like conditions, evince equal average native ability for acquiring knowledge. There would doubtless be marked qualitative differences due to rank, but no perceptible quantitative differences. If, however, we compare the *intelligence* of different classes of society, we observe the most immense differences. This certainly no one can question. These differences can therefore only be accounted for on the supposition that to equal capacity for knowledge enormously disproportionate amounts of knowledge have been supplied. Differences of social position bring differences of opportunity. The experiences which are received in certain modes of life are narrow, special, and valueless; those of other modes of life are broad, general, and valuable. One develops very little intelligence, the other develops much, though the capacity for intelligence be precisely equal. Reverse any two such cases and the results would be reversed. The degree of intelligence in cities is well known to be greatly superior to that in the rural districts. This is by no means due to the superior capacity of city populations. If there is any difference in this respect, it is probably the reverse of this. The country boy removed to the city soon becomes a city boy. So it is with men and with women. It is the more frequent, varied, and forcible contact of mind with mind, the atmosphere of conversation, news, reading, and thinking of a metropolis. For the same reason the more thickly settled and opulent sections of a country exhibit more intelligence than the newer and poorer sections. More and more attention is devoted to *belles-lettres*, to art, and to science. From the plains of Nebraska, where the aspiring youth can only with the greatest difficulty obtain the rudiments of an education, to the great centers of life in London, Berlin, or Paris, where every night large crowds assemble to listen to technical lectures by the masters of science, there exist all degrees of difference in the mere opportunity which equal intellects enjoy for acquiring knowledge and enhancing intelligence.

Panegyrists of the ancients maintain that the native capacity of mankind had reached a stage in the age of Aristotle which it has never since surpassed; and the more we become acquainted with the thoughts of Grecian sages and compare them with those worked out with so great labor and increased facilities by the wisest of modern times, the more we feel obliged to acquiesce in this judgment. Yet no one would for a moment maintain that the *intelligence* of the ancients could be compared with that of later ages. Here, again, an immense difference is satisfactorily accounted for by increased acquisition alone. Had the Greeks and Romans possessed our civilization of science, they would have been fully competent to use and enjoy it. These facts, and many more that might be brought forward, serve to show how far intellect in all civilized races has outstripped knowledge—to how great an extent the skeleton of intelligence is still capable of being clothed with flesh and blood.

So remarkable a state of things is well worthy of an attempt at explanation on genetic principles. We saw, in a previous chapter (vol. i, p. 428), that the superior brain-development of the human race was probably brought about through natural selection as a substitute for the loss of the advantages previously possessed of an arboreal existence, and the lack of most of those successful weapons of offense and defense possessed by other animals. This was aided by social union, by competition between tribes, by language, by war, by migration, and by conflict with natural barriers, cold and want. The development, described in Chapter VII, of the love of acquisition, and the various modes of gratifying this derivative but powerful passion, gave a new impetus to the growth of intellect, and trade and commerce, industry and fine arts were the result. Various systems arose designed to dispense with labor and secure leisure. Among these the priesthood was eminently successful. Monarchy and various forms of government achieved the same object; leisure begat literature, and speculation and pure intellect made rapid strides among special favored classes, and, while the low condition of women tended constantly to check this advance, male selection, which looked to beauty rather than to social position, tended, on the other hand, to distribute the brain-development already attained throughout the lower and less favored classes.

It is a principle of general biology that the direction of development is always along the line of greatest advantage. Every organism has to maintain a perpetual struggle for the preservation of life. Every true advance looks directly to the increase of its means of securing this object. When the plan, as we may call it, of adding to the brain-mass was hit upon for this purpose, sagacity was applied solely to the avoidance of danger and the supply of wants. Unless increasing intellect could establish its advantageousness by seizing upon principles of nature which would enable the creature to make a better defense or obtain a better livelihood, it could not be chosen as the means of preventing extinction. But it proved admirably adapted to secure both these ends, which sufficiently explains why it was chosen. What we should, however, carefully note and duly weigh, is the important fact that the brain-development necessary to produce these comparatively simple results is sufficient both in quantity and quality, when properly directed, to produce far greater and more complicated results. Divesting the mind of all optimistic impediments, we have first to perceive that a far higher degree of brain-development was actually required than would have been required could it have then been properly directed. Firmly grasping once more the principles set forth in Chapter X, it becomes clear that the incipient progress of mankind, like all later stages of progress, was accomplished at an enormous disadvantage, due simply to the normal constitution of the world. Could all the phenomena presented to the nascent intellect have been correctly interpreted, limited though its range was, it would have sped forward with a comparatively lightning-like rapidity. As a matter of fact, however, instead of doing this under the power of the development that actually took place, progress would not have greatly exceeded the rate actually reached, but in its stead a far less rapid brain-development would have gone on. But, however this might have been upon this assumption, the assumption is one that could not have been realized in the nature of things. It was absolutely essential that the transition to manhood should be accomplished at great expense, due chiefly to the obstacles that intellect itself placed in the way. The mistakes, errors, delusions, and suicidal acts that the crude, uninstructed intellect committed in direct antagonism with the great end of intellectual development, are not mere incidents in the calculation, but are legitimate factors in the problem of human progress. Brain-development, considered as one of nature's selected means for advancing the race, must be powerful enough in its good effects to override these necessary bad effects, and leave some margin for real progress. It may be doubted whether this tendency could ever have been set up in any organism whose brain-power had already reached a certain point. It must have been first set up in an animal incapable of any of the compound processes of psychic operation. In such a being, the whole force of the increasing intellect is applied to advantageous uses, as we see it in the fox, seeking its prey, or the crow, evading its enemies. Here all ideation is normal and direct. The reasoning, though feeble, is legitimate, and the conclusions reached are true. But when the stage of compound ideation is reached—when reflection, ratiocination, and speculation begin—then begin also fallacy, error, and hallucination.

These, as we have seen, counteract in a powerful manner the advantageous influence of intellectual activity. As was queried in another place (*supra*, p. 271), these influences may, in many or even in most cases, have more than neutralized the progressive effects of brain-development, and brought about the rapid extinction of many species at this critical point; but that they have not done so in the case of man, or at least of some of the branches of the human stock, is sufficiently proved by the actual development of the race to a far higher position in the organic scale than has been reached by any other species of animal. This has been due to the immense advantage of even the simplest application of the indirect, or inventive, method of securing remote ends. The few surface principles, correctly seized and sagaciously applied, proved more than sufficient to counteract the evil influence of all man's early error and delusion respecting the deeper laws of his environment (*supra*, pp. 274, 305).

The brain, while possessing certain local specializations, is in its *ensemble* a unit—the organ of the intellect. Its development through natural selection had to reach a point far beyond that which would have been necessary could the phenomena of nature have been correctly interpreted. In other words, the intellect, almost unaided by a knowledge of truth, was obliged to serve as a substitute for a much lower degree of intellect coupled with a proper amount of such knowledge. The consequence has been, that the degree of native capacity has always been far in excess of the necessity, and still remains so, if by necessity we consider only the practical end of nature—preservation of life. While this has gone on at vast expense to the energies of the race in the past, it should not be regarded as an unmixed evil. There is still time partially to repair this loss. Letting by-gones be by-gones, it is certainly a fortunate circumstance, now that society is about to waken into consciousness, that its constitution is found to be in so healthy a state. Nature, like a despotic ruler, while she has heavily taxed the resources of society, and lavishly, often wantonly, squandered its revenues, has nevertheless not only kept it out of debt, but will be ready, when society takes its affairs into its own hands, to turn over to it a well-filled exchequer.

The great height to which the human intellect had attained before the historic epoch is attested by innumerable facts revealed in archæology. The brilliancy of its achievements in all the earliest civilizations has been the favorite theme of scholars and orators. The vast and truly profound intellectual labors of the leading intellects of antiquity, not merely in Greece and Rome, but in India, Persia, Phœnicia, Assyria, Egypt, and China, are also well understood and much dwelt upon. But the comparative fruitlessness of all this intellectual labor seems not to have been sufficiently realized until within quite recent times, when men began to see that, to be useful, the mind must occupy itself with realities. There has not been a time since the age of Pythagoras, when the knowledge of natural truth, now enjoyed by Western Europe, could not, if possessed in the same sense, have been equally utilized by any people in Europe, and there certainly has not been a time since that age when the intellect was not fully capable of receiving it.

Nor is this all. The intellect of Western Europe is still capable of easily digesting and thoroughly assimilating a vast amount of natural truth in addition to that now possessed by it; and all the parts of it and of America, between which the greatest inequality in this respect now exists, are capable of holding it all alike, and the proposed increase besides. The chief differences in nations, in local areas, in communities, and in individuals, is in what they *know*, and not in what they are capable of knowing. It is intelligence which so greatly varies, and not intellect; the deficiencies of backward regions are deficiencies in knowledge; the chief errors of the world, as well as its chief evils, have a common origin in *ignorance*.

Let us now restate the question: Upon the increase of which is it more important and necessary that social energy be expended, intellect or knowledge?

Since intelligence is the real end in view, which consists only in a proper combination of the two, all increase in the one in excess of the other is without result. But we have shown that the former is already largely in excess. Why, then, insist upon adding to this, to the neglect of the other? If, in seeking to obtain a larger amount of a compound chemical, composed of two ingredients which combine in definite proportions, an excess of either one be constantly added without adding any of the other, the amount of the compound desired will never be increased. The jar may be filled with the uncombined and valueless mixture, but it represents nothing. Thus it is with the psychic progress of mankind. The only increment which counts is the increment of intelligence, represented by the maximum condition of the lesser of its two components.

The other question was as to which of these two components of intelligence it is easier to supply. There is a certain heroism in the fearless manner in which the human race attacks the most difficult problems. A typical instance of this kind is the attempt to develop the human intellect. The zeal with which this problem has been attacked by "educationalists," as well as the results, reminds us strongly of Don Quixote's war upon the windmills. Wholly ignorant of the great laws of heredity which suggest a real method, hostile for the most part to the theory of natural development, by whose contemplation alone the true difficulties of the task can be duly appreciated, these zealous reformers continue to beat the air and the sea, and fancy they are really subduing the winds and the waves.

The trifling or even questionable progress which the human intellect has made within the entire historic period should suffice to teach the most sanguine that brain-tissue can not be made by hand. The researches of Galton show us with what pertinacity nature and blood hold on and overrule education and circumstances; physiognomy and phrenology (considered as the real science of cerebral morphology) negative the claim that any appreciable alteration in the quantity or quality of the psychic substratum can be effected within the limits of an individual's life-time.

The system hitherto chiefly relied upon for the development of the mind may be appropriately called "intellectual gymnastic." It consists in exercising the intellect on sham problems in the same manner that acrobats cultivate their bodily agility. Logical tournaments and mock polemics are regularly conducted, and various forms of heated "wrangling" are made regular exercises in the highest institutions of learning. Real objects are avoided as unnecessary, and as only belonging to serious life. It is supposed that in this way the plastic mind of youth will be "drawn out" and made something very different from what it would otherwise be. Too frequently it is *worn out* instead, and thus unfitted entirely for the active duties of later years. That some effect is thus produced, not indeed appreciable (unless by the breaking down of the mind), during the life of the individual, but upon posterity after a series of generations, is probably true, though it is apt to show itself in the form of degeneracy or effeminacy—a fondness for the forms and shadows of things accompanied by a disregard of the substance.

There is no royal road to mind-growth. There is no method by which a sufficiently rapid variation in the quantity or quality of the brain can be produced to be visible in the individual, and all change in the intellect proper must be due to corresponding change in the brain. Man's power over the bodily qualities of animals is far greater than it is over his own, yet the most extreme enthusiast in such matters never hopes to alter the character of an animal after it is born. Nevertheless, many wildly fancy that they can transform human beings after birth. This only shows that the science of dynamic sociology is in its crude stage, when the coarsest conceptions are entertained and impossibilities credited, while the delicate nature of the truths concerning it find no responsive chord in human beliefs and ideas. A strict parallel is furnished by biology in the crude beliefs early entertained on the question of spontaneous generation.

There are two ways in which intellect may be really developed, though the results can only appear in the course of successive generations. One of these is by the practical observance of the laws of heredity, or, in other words, by rational selection of the parents of each generation. The other is by an intelligent modification of the environment of individuals, such as to cause an increment of variation in each generation in the direction desired.

The first of these methods is far more rapid than the second, but its adoption is attended with very great practical difficulties. All that is necessary to say upon it has been said in other parts of this work (*supra*, pp. 392, 463).

The other method, though less rapid, is not less certain than the first, and is entirely practicable. The variations which take place in the different organs of animals are due to changes in their environment, which make it advantageous to the species that such variations occur. But the end may be changed, and artificial be substituted for natural selection. Thus far the equilibration (of organism and environment) is indirect. That an artificial mode of direct equilibration may also be substituted for the natural mode, though little recognized, is equally obvious. If the human intellect is to be artificially increased it will probably require to be done through this direct form of selection, viz., such that the changed circumstances, appealing directly to the intellect, will effect the desired differentiation.

By changed circumstances must of course be understood the substitution of a new and different class of experiences. In order to produce the desired result, these new and designedly arranged experiences must be such as will tend to supply the intellect with a greater amount of information of a higher class. The theory of direct equilibration is that an organ is strengthened by use. But use implies legitimate use. It does not strengthen the stomach to act, ever so powerfully, upon vacancy. Neither does it strengthen the mind to revel in empty speculation. Truth and fact are the natural food of the intellect,* and its powers will be increased and its physiological base will be broadened by the ample supply of this legitimate pabulum. To state the problem in somewhat plainer terms, we may say that the only present practical mode of contributing any thing to the development of intellect, is that of supplying it with knowledge. We have already seen that knowledge for its own sake, wholly independent of capacity, is far more important than any intellectual increment. We now see that, even granting the importance of such intellectual increment, the only means of realizing it is the supply of knowledge.

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* "Frustra enim fuerit speculum expolire, si desint imagines; et plane *materia* idonea præparanda est intellectui, non solum præsidia fida comparanda." (Bacon, "Distributio operis," "Works," vol. i, p. 222.)

We have considered the great difficulties in the way of all efforts to produce an artificial development of the intellect, and the necessarily slow and secular nature of such changes, whether brought about by natural or by artificial means. It remains to consider, in comparison with this, the difficulties and facilities which exist or may exist in efforts to supply knowledge.

If it were solely a question of the supply of original knowledge—knowledge for the first time wrought out of phenomena and natural law—the task would, of course, be a difficult one; yet the difficulties even here are by no means so great as those attending the actual modification of the physical basis of psychic phenomena. Where favorably situated and industriously disposed, a single individual during a life-time may, and often does, add large increments to the fund of known truth. A very few minds have furnished the world with all its knowledge, the general mass contributing nothing at all. But fortunately this assumption is quite unnecessary, at least in the present state of society. Just as we have seen that the degree of intellectual capacity has far outstripped what would have been necessary could it have been combined with knowledge in due proportions, so we shall see that the amount of knowledge originated far exceeds the amount possessed; even the originators usually possessing very little beyond their own individual productions.

When, therefore, we speak of increasing knowledge in society, we include, in addition to the origination of it, its distribution. While intelligence is the only branch of economics in which a division of labor is disadvantageous, every man having need to do his own knowing, it is, under existing conditions, the one in which the division of labor has been carried to the greatest extremes. Only a few know most of what is important to be known. One knows one thing, another another, and a third a third. No attempt is made to equalize knowledge. It seems to be feared that some degeneracy or effeminacy would result from the general distribution even of such knowledge as all admit to be important. It is thought better that men should be allowed to quarrel over matters that have long been definitely settled in a few minds, and might easily be so settled in all minds.

The distribution of knowledge, though a somewhat laborious process, is at the same time a comparatively simple and easy one. It rests upon the law, enunciated in the last chapter, that whatever is presented to the mind, if there be no rebutting evidence or testimony, will be accepted. This law is frequently referred to as anti-progressive, in consequence of the ease with which error may be propagated by it. But it is forgotten that it is at the same time the chief vehicle for the conveyance of truth also, and of all knowledge. The greater part of every one's knowledge is and always must remain second-hand. The man who should only know what he had found out for himself, without depending in the least upon what others had found out and communicated to him, would be incapable of making his way through life.* The most successful originators of knowledge take care first to possess themselves, without research, of all the knowledge bearing upon their work which others have evolved before them, and they generally realize that their own contributions, however important, form only a small addition to the general body of increasing truth.

The method of distributing extant knowledge is simply to communicate it. It may be safely assumed that it will be accepted. After all, the mass of mankind must necessarily fall back upon authority. This will present no difficulty, so long as the means of verification are always left free to all who may doubt. This method is certainly easy and wholly feasible.

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* Spencer, "Education," p. 32.

Briefly to sum up the main points of the discussion thus far, we may therefore say:

1. That the degree of intellectual capacity, as already spontaneously developed, is amply sufficient, in the present civilized races, to establish and conduct a thoroughly organized social system.

2. That all attempts artificially to accelerate this development must be attended with great difficulties, and, in so far as successful, must occupy prolonged if not secular periods.

3. That the only two methods by which this can be accomplished are, first, artificial selection, or the scientific propagation of human beings—a method confronted by great practical obstacles; or, second, rational change of environment, consisting in the supply of the intellect with more and better legitimate materials to work upon, *i. e.*, increase of knowledge.

4. That the amount of useful knowledge possessed by the average mind is far below its intellectual capacity, thus keeping the degree of intelligence correspondingly below what it might be.

5. That the actual amount of such knowledge originated by man, though doubtless still below his ability to utilize it, is sufficient, if equally distributed, to elevate him to a relatively high position, and to awaken society to complete consciousness.

6. That the origination of knowledge, though difficult and slow, is easier and more rapid than any possible increase of intellect can be, and may be easily made to keep pace with the latter in the future.

7. That more immediately important than any of the other *desiderata* named, as well as far more easy of accomplishment, is the thorough distribution of the great body of valuable knowledge already extant.

It is possible for confusion to exist respecting what is meant by the expression "increase of knowledge." Since knowledge is only acquired by experience of some kind, and since life consists in all cases in a succession of experiences, increase of knowledge must consist in a certain change of experience. So far as time is concerned, every life receives the same amount of experience in the same time, since for each its time is fully occupied with experiences. Every separate experience necessarily adds something to the previous stock of knowledge, and that increment is strictly characteristic of the experience. So long as we consider only primary knowledge, or mere sense-perception, this is true throughout. The impression experienced is real, and every new impression furnishes a new knowledge. But we have previously seen that secondary forms of knowledge commence close down to sense-perception. Even the subjective impressions, or sensations, are more or less compound, owing to the complex character of the percipient nerve-fibers, and the first attempt to cognize the qualities of objects involves true inferences from varied experiences. Such inferences, even here, are more or less liable to be false, and this liability to error increases in proportion as the kind of knowledge grows more inferential, which it does at each remove from primary sense-perception. We have seen that the knowledge of irrational animals is more correct and reliable, though far more restricted, than that of primitive, rational man. We have also seen that the only correct and reliable knowledge of primitive man was that derived from the simplest experiences. Inferences drawn from experiences of involved or deep-lying phenomena were not only liable to be false, but were always false (vol. i, p. 45; vol. ii, p. 273).

The first mode, therefore, of increasing knowledge, is that of rendering experiences reliable.

Error is not knowledge. The primary cognitions upon which it is based are real, but they are valueless. As a rule, knowledge grows more valuable as it grows more inferential. Primary knowledge is useful only as a means of gaining secondary and tertiary knowledge. It is as true of every thing else as of natural history, or biology, that the value of the facts consists in employing them for the establishment of principles. While the knowledge possessed must depend upon experiences, the latter are no necessary measure of the former. The ratio of the false to the true inferences may vary in all degrees, and the ratio of the knowledge to the experience will vary proportionally. A life full of experience may leave a mind empty of knowledge. This will be the case unless the inferences drawn from the experiences are correctly drawn.

The power to draw correct inferences from experiences depends but slightly upon the degree of intellect. This dependence is a fixed one, and may be formulated. The degree of involvedness, or complexity, of the phenomena experienced remaining the same, the increasing intellect will draw false inferences until a certain point is reached, when it will grasp the true one. The degree of intellectual power remaining the same, and the phenomena presenting all degrees of complexity and occultness, the simpler ones, up to a certain point, will be correctly interpreted, and the more involved, above that point, will be incorrectly interpreted.

To these propositions certain practical qualifications must be made. The first is that, in the natural state of the human mind, the degree of intellectual development necessary to give true interpretations to many of the phenomena whose comprehension is of the utmost value, would be greater than that yet developed upon the globe, so that but for other aids the world would have still remained wholly ignorant of most of the really valuable truths now possessed. So vast a mind-force would be required to grasp a few simple principles, that progress would be exceedingly slow.

In the second place, if we consider all this labor as being accomplished by the strength of intellect alone, the isolated character of each result would render it of less value when obtained. Even in the early stages of anthropological development, the secondary force began to count in man's progress. Had he been obliged to depend at each recurrence of his needs upon the new and original creation of the life-preserving conditions wrought through the exercise of his sagacity, he would have doubtless succumbed before attaining full manhood. This the animal must do, except in so far as the development of instincts exempts it from this rule. Man must not only have a substitute for instinct which he early lost, but also an offset against the retrograde action of his manifold errors, to which no other creature is in the same sense subject. Such a substitute he found in the cumulative effect of the limited class of experiences which were correctly interpreted. This accumulation of correct interpretations of phenomena, preserved through memory, constituted his fund of knowledge; and his real progress was due, not so much to the growth of his power correctly to interpret phenomena, as to that of his stock of information. But his power to comprehend phenomena was in turn increased much more rapidly by the use he was able to make of his knowledge than by the actual development of the organ of the mind.

All this is as true of developed as of undeveloped man. The progress of the world has been due chiefly to the accumulation of correctly interpreted experiences of which each age has made use in producing its advancement from the preceding. Art has done this, science has done it. Science is knowing, art is knowing how. The great impetus which modern science has given to civilization was the result of the superior facilities which it afforded for the correct interpretation of valuable experience, and not at all of any sudden rise in the native capacity of the race for such interpretation. It accomplished its object simply by pouring a flood of useful knowledge upon the world, and not to the least perceptible degree by augmenting its capacity for knowledge. This last illustration brings us directly to the true secret of the first mode of increasing knowledge, viz., that which increases the ratio of correct to incorrect inferences from experiences. For what principally distinguishes the modern scientific method from previous methods of acquiring knowledge? Whatever other characteristics it may possess, that of the systematic *verification* of all the experiences made under its control is assuredly the one that chiefly and radically divides the scientific from the unscientific. This, then, is the principle that must be relied upon for that increase of knowledge which consists in the elimination of error from the mental conceptions of mankind. That the verified alone is the known, which we postulated in the last chapter for the higher and more complicated classes of conceptions, judgments, and conclusions, to which that chapter was devoted, may now, with equal propriety and safety, be extended to every form of knowledge above the primordial sense-perceptions.

The mode of increasing knowledge thus far considered is calculated to increase the number of truths apprehended. Assuming the number of experiences to be the same, the mind which possesses the largest proportion of verified ones has acquired the most knowledge, or the greatest number of knowledges. This may, therefore, be called the *quantitative* mode of increasing knowledge. Aside from the obvious advantage of an increased quantity and variety of correct conceptions, this verification of experiences has the equally great merit of removing the same number of errors as it adds of truths. The disadvantageous effects of error are often greater than the advantageous effects of truth, so that, for every inference subtracted from the side of error and added to the side of truth, a twofold benefit is secured.

But there is another mode of increasing knowledge which may be distinguished from the last as the *qualitative* mode, and which we must now consider.

That all forms of knowledge are not of equal value is a proposition too plain to require proof; and yet there is no more perplexing problem than that of determining just what knowledge is really most important. In reasoning upon this question, the usual fallacy of beginning with the most complex examples is commonly committed, and therefore the question becomes at once inextricably entangled and appears quite irresolvable. It may be freely granted that the question, What would be the most important knowledge in the case of any particular individual, or of any one individual in general? admits of no trustworthy answer, but it does not follow from this that there are no clear general principles from which may be deduced tolerably accurate rules for determining what general classes of knowledge, and to a great extent what specific items of information, lying within the capacity of every developed intellect, will best subserve the purposes of all men. There are objects, phenomena, and laws, which it is to the highest interest of mankind, and of society, that every individual of mature years, without a single exception, should be familiar with; and perhaps it is not too much to say that the greater part of this most useful knowledge is not now possessed by those persons who are called cultivated, and that much of it is only obtainable by extraordinary efforts, coupled with peculiarly favorable opportunities.*

In seeking for rules by which to determine what knowledge is most important, two leading tests, or criteria, present themselves, by the application of one or the other or both of which, sufficiently accurate judgments may be formed in most cases. These are, first, the test of relative *generality;* and, second, that of relative *practicality.*

As to the first of these tests, it is true within limits that knowledge is more important in proportion as it is more general. Isolated facts are only rarely useful in any great degree. They are well worth laboring for, though it is not generally for any good that they are capable of bringing of themselves, but in order to compare them with other facts, and to arrive at general laws or principles. It is not objects in themselves, so much as the relations which they sustain to one another and to man, that are of immediate interest and value. Whatever is of value to man is so because of his power to make it of advantage to him. The advantage which he takes of things is the control which he exercises over nature. The degree of such control is proportionate to the breadth of his grasp of the principles which underlie phenomena. But this breadth of grasp is due altogether to the generality of his conceptions—assuming, of course, that they are true. This branch of qualitative knowledge is more or less connected with quantitative knowledge, since the power of generalization, other things being equal, depends upon the number of constituent truths comprehended. But, while it is correct to say that the larger the number of truths comprehended the greater is the amount of knowledge, it is also true, and in a much stronger sense, that, of an equal number of truths, the more comprehensive they are, the more they augment the sum total of the knowledge possessed. By such generalization the mind is expanded, and a vantage-ground is reached from which other knowledge, both special and general, is more easily acquired.

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* Humboldt, "Kosmos," Bd. I, S. 12. Haeckel ("Anthropogenie," S. 3, 4) gives a typical example. The complete ignorance of so-called cultivated people as to the nature of cells in biology, and of the fact that they have themselves each been evolved from a simple cell, shuts them off from a knowledge of the most important truth of their existence.

The test of generality, however, is obviously insufficient in itself. Truths of equal generality may be at the same time of unequal practicality. To find general principles by which the degree of practicality of different classes of knowledge may be determined is a much more difficult task. In order to approach this problem, it will be necessary to revert once more to the primitive condition of things. Without the power of falling back frequently upon the less complicated sciences, all progress with questions of sociology must be from time to time brought to a halt, and any thing like a consistent science of society must be impossible.

The general principle upon which practicality rests is that of *correspondence*, which runs through all the kingdoms of life. Nature is extremely practical, though not what men call economical. Nature's economics differ from man's in being genetic, involving great waste of products (vol. i, pp. 73, 521; vol. ii, p. 87). In genetic economy, while no amount of cost is spared to produce the smallest result, nothing is ever done unless it produces some result, however slight. In human, or teleological, economy, on the other hand, great parsimony is displayed in the outlay, and frequently much labor is expended without result, owing to erroneous interpretations of phenomena. Nature never errs, but she wastes. Man economizes but often loses through error. Nature may be called practical, but not economical; man economical, but not always practical.

The knowledge which animals acquire through adaptation to their environment, though limited, and usually gained only at an immense sacrifice during the stages of imperfect and partial adaptation, all tends steadily in one fixed direction toward the most practical of all objects—the preservation of life. This was as true of *Pithecanthropus* and *Anthropoides* as of other species of animals. And when *Anthropus*, or *Homo*, was fully evolved, he was still acquiring knowledge of this practical sort in this expensive way. The continuation of his development to any given stage must have been rendered possible by the gradual acquisition of just that kind of knowledge which was adapted to the preservation of the race under the changing conditions of its existence. No other test of practicality will apply to man in his most advanced condition. The kind of knowledge he most needs now, as at his entrance into manhood, is that which will preserve him and strengthen his hold upon existence both as an individual and as a race.

It is here that comes in an important principle, insisted upon by Mr. Spencer throughout his works, but especially in his "Data of Ethics," * according to which no distinction can be drawn between well-being and life. That which conduces to the former fortifies the latter; and, conversely, only that which renders life more secure can be upon the whole agreeable. The same law which makes the practical to consist in whatever tends to preserve the existence of the individual and the species, renders that also practical which, after existence has become secure, tends to multiply and intensify the enjoyments of existence. In seeking, therefore, to estimate the relative value of different kinds of knowledge, our conceptions of the practical must be so enlarged as to include, in addition to the primary ends of nature, the special ends of human life also, considered as a simple extension and amplification of the former. While nature aims only to exist, man aims also to enjoy; but such is the harmony of things that, whatever legitimately secures the latter end, must tend also to secure the former. Vital function must be attended with a real satisfaction, otherwise it is tending toward cessation, and those higher forms of exercise which appear as happiness represent only more exalted degrees of vital function. Whatever tends toward preservation, while such influences are needed, will tend toward improvement if continued beyond the point where preservation is secured. The kind of knowledge, and the only kind, which tends to preserve the organism while exposed to all the hazards of life in the midst of nature, is knowledge of its environment; and so, too, after nature has been subdued, danger removed, and life securely protected by artificial means, it is still increased knowledge of the environment that can alone bring other and greater forms of amelioration. Man can not rest satisfied with protection only, the mere negative form of happiness. He will seek happiness in positive forms, and he should seek it. Civilized and enlightened man is perpetually seeking it, and he finds it only in proportion to the acquaintance which he makes with his environment.

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* Pp. 14, 26, *et passim*.

But what constitutes the environment of the civilized man? The character of the environment of animals and of savage man is easy to perceive. It is the earth, the air, the rocks and waters, the trees, grass, birds and animals, the last to include, in the case of the savage, the men of his own tribe and of other tribes, and also civilized races, in case any such ever come in contact with him. It is by learning to know these things that he is enabled to protect and defend himself.

But, looking to races somewhat more advanced than the crude savage, we find, as frequently shown before, that their advancement has been due to action on their part in taking advantage of certain deeper laws of nature, in making use of materials that savages fail to make use of, in interpreting phenomena that savages do not correctly interpret, and, through these means, in devising plans and inventing appliances for multiplying the products of nature and increasing the supply of physical, social, and intellectual wants. And, when we have reached the highest forms of social existence, we find that the only effective means by which desire is gratified, progress achieved, and happiness attained, consist in still deeper knowledge of the natural surroundings, in a still wider grasp of laws and principles, in the correct interpretation of still more obscure phenomena, and in the discovery and invention of still better means and methods of securing remote ends. To know one's environment is to possess the most real, the most practical, the most useful of all kinds of knowledge, and, properly viewed, this class of information constitutes the only true knowledge.

This expression — knowledge of the environment — has been employed because it was applicable to the entire series of stages which it was necessary to embrace in order adequately to elucidate the law under consideration. For the animal, the savage, and the barbarian, no definite name exists for this class of knowledge which common parlance would recognize. But for civilized man in the present epoch, there exists a word, well recognized and accepted, but in many cases only vaguely understood, which comprehends all that is involved in our expression, and nothing not involved in it, and which is co-extensive and completely synonymous with it. That word is Science. Knowledge of man's environment is nothing more nor less than scientific knowledge; and, conversely, all scientific knowledge consists in knowledge of the environment. It may even be advantageous, and aid in the elucidation of other questions, to identify science in this manner with those primitive mental efforts by which the earliest steps in human progress were taken; and we also thus return, by a new and unexpected route, to the truth, popularly ignored or denied, that something which differs from science in no essential respect precedes and moves the rudest forms of art (vol. i, pp. 59, 552; vol. ii, p. 193).

But it may be said that all knowledge is in this sense scientific, that there is no fact or truth which has no bearing upon man's surroundings or connection with his environment, that in a certain sense all things are natural, and that therefore this distinction is imaginary, and the argument unnecessary. The reply to this is, that experience is scientific or not according to whether it is made so or not. If we accept as knowledge the conceptions (exclusive of false ones) which the mind possesses, it may be in great part wholly unscientific. *Vere scire est per causas scire.* The only useful knowledge is that which furnishes relations. Isolated facts, until employed for this purpose, are not really employed at all. An object known only in itself can scarcely be said to be known.

Again, there are truths which are so vaguely related to man's natural environment as to produce no impression upon it. Knowledge which can exert no influence is not scientific. Science is dynamic. Whatever it touches is transformed. The only object in knowing is by means of it to do something. "*Science, d'où prévoyance; prévoyance, d'où action.*" *

Finally, knowledge may lose its scientific character through mere *attenuation*. From original knowledge there comes derivative knowledge. The relations which subsist between primarily derivative truths form secondarily derivative knowledge; relations between secondary truths become tertiary knowledge, and so on. A point is at length reached where knowledge is so widely separated from its basis in natural phenomena that its connection with the environment practically ceases. No amount of such knowledge enables man to accomplish any useful end of his being. It is by the more or less exclusive devotion of peoples to these excessively derivative classes of knowledge that they gradually lose their hold upon their environment, fall into decadence, and become effete and degenerate. Every race or nation is in constant danger of this worst of all calamities. The human mind is so constituted as to be fond of such derivative knowledge. It possesses a certain charm of intricacy, delicacy, and purity, which is seductive. The last-named quality, by which it seems lifted up from its crude foundations of materiality into an ethereal atmosphere, is especially fascinating, and causes it to be preferred to any form of original truth. The mind revels in its airy realms; intellectual, social, and moral ideas are borne up and linger in its midst; and society seems to cut loose from its solid base and to dwell in a state of mysticism and unreality. More than once in the historic period has this state of things been realized, and there are parts of Europe to-day in which it is more than half realized.

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* Comte, "Philosophie Positive," vol. i, p. 51.

It was the special merit of modern science that it tended to bring the world back to nature, from which it had so far wandered. In the Middle Ages nature was almost wholly neglected and forgotten. Nothing was thought of but *spirit* conceived as wholly independent of body and of earth. Aside entirely from the truth or falsity of such conceptions, their complete impotence to modify the environment is obvious at a glance.

But, coming nearer home, let us inquire in how far the knowledge of our time is original, or scientific, and in how far it is derivative and attenuated. What constitutes the bulk of that which passes for knowledge in society? A large part of it is mere social conventionality. A knowledge of the conventional code is regarded as the highest accomplishment. This, within reasonable limits, is commendable and useful. It deals with relations between men, and in so far affects the environment. But such are the nature and tendency of custom and fashion that they universally gravitate away from their basis in reason and advantage, and become drawn out to a condition of extreme tenuity. Their forms continue to combine with one another, and the compounds thus formed to recombine with other compounds from the same elements, until every trace of their origin or motive has disappeared. Revamped and re-enacted, they continue to engross attention; the more irrational they become the more difficult they are to comprehend, and the more time is given up to their study and observance. And thus mere etiquette comes to form a large share of the knowledge of the world, and is by many regarded as their most important acquisition.

Another engrossing theme is social position. It is the study of many people's lives to procure, no matter by what means, some public notice, some mark of distinction, some little "cheap" eminence by which their existence may be recognized. To succeed in this, they do not set about trying to accomplish something useful and worthy of praise; they seek the end by little feats of strategy or sharp practice, by affecting a character which they do not possess, or by employing the labors of others and passing them off as their own. To such persons, knowledge which enables them to succeed in this is of the highest value, and some seem to possess no other. They often actually succeed in working their way, through intrigue and hardihood, into high places. This is their life aim and study, and they inherit a tact for it from a line of ancestors similarly engaged. As Edmond About says: they never think what they shall *do*, but only what they shall *be*. The amount of true knowledge possessed by persons of this class may often be set down as *nil*.

If we examine the popular conceptions of literature, we shall find that the most derivative is the most sought and admired. Literature is not valued as a vehicle of ideas, but as a pleasing phantasy. The wildest rhapsody, if pleasing to the ear, is preferred to sober truth, however well couched. What is called the polite and classic literature of the world consists chiefly in adroit modes of saying nothing. Putting that of all languages together, there is not truth enough in it all to have kept civilization from perishing if it had depended solely upon it for its stock of knowledge. Valuable for other purposes, it is comparatively valueless for that of keeping man acquainted with his environment.

If we look to philosophy, where, if anywhere, we should expect to find the most general and useful truths, we in reality find that human speculations have been for the most part mere feats of intellectual gymnastic, and to a great extent they are so still. The dialectics of the school-men are re-enacted now in the form of brilliant magazine articles and studied popular lectures.

The prevalent ideas of society and life, not to speak of such as are false, are narrow, and for the most part valueless. They are confined to the most superficial phenomena, and dwell only on disconnected events. No one dreams that human beings are subject in their performances to any laws residing in their own nature, or that of nature around them, and they are constantly contemplated as ultimate sources of conduct and action. This ignorance vitiates completely all the judgments formed respecting both individual and social life.

In politics the degree of unwisdom displayed is perhaps at its highest point. Interest alone governs, and perhaps in the present state of society it is best that it should, since it is doubtful whether intelligence could do without it. But it must not be forgotten that this is to admit that society is not yet out of the control of natural law under which the practical interest of the organism is the supreme guide. Yet even of this law, by which his very political career is controlled, the "statesman" is wholly ignorant. Financial systems are chaotic. Laws are inoperative, or produce unforeseen effects. The policy of states is perpetually changing, rendering permanent enterprises insecure. Wars are waged for trifling grievances, and shrewd capitalists are more and more gaining absolute dominion over the wealth of the world. The situation is alarming, but no present remedy exists.

The so-called "learned professions" afford no guaranty that the knowledge required to enter them shall belong to the useful or practical class. Jurisprudence, unless in the hands of an awakened intellect, has nothing to do with nature. It deals with relations and phenomena of the highest degree of derivativeness. Theology looks upon nature with disdain or contempt, and is the representative, in this respect, of the spirit of the Middle Ages. Even Medicine, which can not, if it would, ignore the human body, clings as closely as the light of the age will allow to the ancient exorcism out of which it has grown, and, except where accidentally intrusted to enlightened and emancipated minds, still rests on ontological dogmas in lieu of causal processes.

Education itself fails to furnish true knowledge. Indeed, it expressly disavows this claim, and demands as its chief end the development of the intellect, which we have shown to be little more than a *brutum fulmen*. In so far as it really imparts any knowledge, it is of the technologic rather than of the scientific kind. It teaches the *how*, and not the *what*. In view of the modern demands for greater attention to technological education, this statement may surprise a few persons. But let us look at it. The "rudiments of an education" are declared by "educationalists" to consist in learning to "read, write, and cipher." But these are all *arts* simply. The selections made from classic authors to acquire the first of these accomplishments carefully aim to avoid affording any information. Learning to write is from set copies: "Many men of many minds; many birds of many kinds." When "common arithmetic" is exceeded, as it sometimes is, the higher "mathematics" taught are, like it, modes of solving numerical puzzles. Mathematical instruction is confined to the different forms of the *calculus*, without even the poor boon of a preliminary account of how these marvelous products of genius chanced to have been discovered. It rarely affords the student a glimpse of the true principles of mathematics. The higher curriculums of colleges and universities would, upon analysis, reveal a similar, or even greater, relative neglect to recognize nature. For, while the technological knowledge there imparted is of less relative value and the scientific information proportionally less, vast labor is devoted to a class of derivative knowledge which rarely results in any practical advantage. I refer, of course, to the unscientific study of obsolete languages. I say unscientific, for, if these institutions would really teach comparative philology, which is one of the most useful sciences and greatest aids in teaching man what he is and whence he came, no scientific man would dissent. But that any thing approximating this is usually attained, no one, who has any idea of what philology consists in, will maintain.

Without reviewing other departments of knowledge, let us take one general glance at the condition of society as a whole with respect to the subject before us.

Confining ourselves to the most enlightened communities, we may remark that there exist two widely separated classes which may be called the scientific and the unscientific. Numerically, the former constitute comparatively but a very few—a handful, as it were. These two classes are both found, in almost the same relative proportions, in nearly every department of life. The line which divides them cuts through all professions and pursuits. There are scientific as well as unscientific persons in law, theology, medicine, in commerce, manufactures, trade, and industry, in institutions of learning, schools of art, and halls of legislation, as also in the field of the agriculturist and the workshop of the mechanic.

These two classes, especially in all clearly defined cases (for there are of course intermediate and connecting grades), are widely separated intellectually. The unscientific man looks upon the scientific man as a sort of anomaly or curiosity. The subjects in which the latter is interested are by the former considered strange, unpractical, or visionary. The man of science is deemed whimsical and eccentric. The advanced views which he always holds are apt to be imputed to internal depravity, although his conduct is generally confessed to be exemplary.

In a whole community there may be but one scientific man. He is chiefly looked upon by the community in the manner above described, though by a few he is usually the victim of coarse exaggeration, and held to be a sort of prodigy. He takes no special interest in the current social events, but cares more for the natural phenomena going on around him which the rest take no interest in, and in fact do not generally see. He observes the weather, the stars, the rocks, the vegetation, the birds and animals of the locality; even the ants, beetles, spiders, and worms are not neglected. Or, he may be mechanically inclined, and spend much time in experiments. All this is regarded by the unscientific as evidence of partial derangement. He reads as well as they, but the works he reads are pronounced abstruse and incomprehensible. They are neither fiction, nor poetry, nor classic literature. He reads newspapers very little. He wants to see only the bare record of the most prominent events, stripped of all unnecessary or ornamental verbiage. Phenomena thus recorded he regards as belonging to his scientific pursuits. They interest him only as affording data for understanding the laws of social science. He has no professed principles. He acts according to his inherent convictions in each particular case. His religion and politics are hard to find out, because on all questions at all doubtful he is always uncommitted and open to conviction. If asked his opinion as to any future result, if given at all, it will rest solely on the evidence he possesses, and afford no indication whatever as to what he desires the result to be. He works hard, much of his time being devoted to wholly unremunerative labor. He publishes the results of his investigations to the world freely, and if, as is frequently the case, they are of great value to society, some shrewd but unscientific person succeeds in deriving a profit from them, which he never thinks of sharing with the author. Such is a partial portrait of the scientific man. Clinging through life to the sound material base of things, he usually contributes something, however little, to the permanent improvement of the condition of the race, the total amount of social progress achieved consisting in the sum of the increments added by this small class under so great difficulties.

It may be objected that such men are specialists, and that it can not be expected that the majority of mankind shall be specialists; that they have other more practical work to do, to take care of their families and dependents in society. To this it may be first replied that the true scientific man and the scientific specialist are not necessarily identical; that while in order to achieve any great result it is necessary to pursue some specialty to a greater or less degree, still, as a matter of fact, those most frequently referred to as specialists, and popularly regarded as scientific men *par excellence*, really belong to the unscientific class, possess the narrow views, share in the superficial pursuits, and entertain the derivative ideas of that class. They pursue their specialties from a mere impulse, or passion, and make no use of the data they collect. In the second place, it is as true of scientific as of unscientific persons that they have practical duties to perform, families to provide for, and dependents to support. Rarely paid for their scientific labor, they simply make the sacrifices necessary to carry it on.

In contrast with this small, earnest class, we behold the great swarming mass of thoughtless humanity, filled with highly derivative ideas vaguely and confusedly held together; eagerly devouring the light gossip, current rumor, and daily events of society which are intensely dwelt upon, each in itself, and wholly disconnected from all others; entertaining the most positive opinions on the most doubtful questions; never looking down upon a pebble, a flower, or a butterfly, or up at a star, a planet, or a cloud; wholly unacquainted with any of the direct manifestations of nature, except as they may thwart the pursuit of their superficial pleasures (in which case they are usually regarded as "providential" occurrences); passing through a half-unconscious existence with which they keep no account, and leaving the world in all respects the same as they found it.

While this picture may seem somewhat more highly colored than the preceding, still, when all intermediate stages are set aside and the real character of the majority of mankind of both sexes is considered, as well the fashionable frivolity of high life as the narrow outlook of low life, and the excess of the unthinking classes in middle life, the candid critic will probably be ready to pronounce it not overdrawn.

Popular conceptions are every-where more or less trivial and unsubstantial. Not that the general public possess no knowledge, but that their knowledge is both taken and administered in homœopathic doses, natural truth having reached its hundredth attenuation before it is deemed suitable for their pampered mental systems.

That this is not natural, in the sense of being the sort of diet which the intellect spontaneously seeks, is abundantly proved by the almost universal fondness of children for natural objects and phenomena. Who has not noticed their intense interest in nature—their passion for pretty pebbles, for flowers, insects, birds, and animals, for torrents, mountains, rocks, trees, clouds, rainbows, and sunsets? They are also very much impressed by the manifestations of force in nature—by the winds, the lightning, the waves, the tides, and the ceaseless flow of great rivers. It is education, coupled with inheritance, which crushes out these healthy impulses. It is the ignorance of parents and other adults with whom they associate, and to whom they naturally look for instruction, in failing to respond to their anxious inquiries and in treating them as trivial, which gradually dulls their sense of natural beauty and their interest in natural processes. This illustration, it is true, is now trite, but it is so overwhelmingly convincing and wholly unanswerable that it can do no harm to reiterate it here.

Knowledge must be regarded as furnishing the data for correct opinions. It is true that opinions which are both subjectively and objectively settled constitute knowledge. These are the integrated product of many cognitions of lower degrees of complexity, and form the sure foundations of all useful action. But opinions which are only subjectively sufficient, and upon which much action is also necessarily based, are safe in the exact proportion that their elements consist of verified experiences. The advantage which results from action will be the same, whether it be dictated by opinion or by knowledge; it will make no difference, provided the proposition from which it proceeds be objectively true, whether it be subjectively settled or not. The greater part of all our acts must, for a great while at least, if not forever, be guided by only partially verified opinions.

The complexity of the phenomena with which man has to deal, and with reference to which he must act, is such as to render the greater part of his opinions more or less *probable*. Most of the certainty which it is possible to attain is what is called *moral certainty*. Such certainty approaches absolute certainty in proportion as the complex data of which it is made up become verified truths, *i. e.*, in proportion as it rests upon knowledge as its basis.

Keeping in mind the production of advantageous action as the end in view, and the real *use* of knowledge, we may now note the connection of the last two chapters with the present one. The two great advantageous classes of action were seen to be ethical action and dynamic action. Corresponding to these we also saw in the last chapter that there are the two classes of opinions, ethical and dynamic. We need dwell but lightly in this chapter on the nature of ethical knowledge and dynamic knowledge which must form the basis of such opinions and actions.

ETHICAL KNOWLEDGE.

Respecting ethical knowledge, however, it is important to point out that it does not consist in an acquaintance with the strict, accepted canons of morality. It is not upon this class of knowledge that men act. The study of ethical systems is important only as an historical or critical study, in the same sense that scholars study religious and political systems; viz., for the purpose of throwing light upon their causes, development, or genesis, and of comparing those of one age or people with those of another. These moral systems, with all their rules, laws, and internal machinery, are the *products* of the state of morals existing when they were formed, and not the *causes* of it. For the cause of a given state of public morals it is necessary to look elsewhere. The solution of this problem has been indicated in previous chapters, especially in the last (*supra*, pp. 441, 468).

Ethical action flows from ethical opinions, which are something very different from a familiarity with moral rules. It is elevated views respecting man's relations to the universe and to man that liberalize his conduct. Within the period of written history no epoch has shown such real and rapid progress in morals as the modern scientific epoch.

Compare the moral freedom of modern nations with that which the same nations enjoyed during the fourteenth or fifteenth century. See how religious, political, personal, and proprietary liberty have advanced. This is true moral progress. Yet this epoch has been characterized by an evident neglect and somewhat pungent criticism of the accepted ethical canons. It is not, however, to be attributed to this, but to the sudden and enormous expansion of the views of mankind respecting the world and its inhabitants. It has been due to genuine progress of ideas. Anthropocentric ideas are essentially immoral. They puff their holders with conceit and arrogance, and lead to base, selfish abuses of power. From the notion that the universe was made for man to the one that it was made for some one man is an easy and natural step, sure to be taken by half-rational beings warped by interest and passion. The old geocentric theory had the same tendency. All narrow views about nature not only contract the mind, but dwarf and disfigure the moral nature of man. It is only when the eyes commence to open to the true vastness of the universe and to the relative insignificance of human achievements, that it begins to be thought not worth while to boast, to oppress, or to persecute.

A not less conspicuous manner in which this change was wrought was by the unsettling of previously fixed beliefs. The thought seemed to come over the world in the new light which science shed, that "perhaps, after all, we have been wrong." Mankind, as a whole, are honest. So long as there was no doubt, they pursued the only logical course; but, as soon as real doubts arose, their first effect was to check procedure, very much as new and unsuspected evidence in favor of the innocence of a prisoner will influence a jury. "The benefit of the doubt" was a principle that entered deeply into the world's morals the moment science furnished any evidence upon which to raise a doubt.

But these legitimate ethical views were not manufactured out of nothing. They were not smoothly and quietly slipped in beneath the accepted beliefs of the age. They were unwelcome and repugnant. They were bitterly opposed, not only by denunciation and verbal prohibition, but by physical coercion. Their power, however, lay in the amount of evidence which was accumulated in their support. They were at length seen to rest on truth. The data of the new opinions were verified experiences. It is this fact which especially interests us here. The force of an opinion will depend upon the degree of verification of its data. The value of ideas depends upon the extent to which they are founded in knowledge.

DYNAMIC KNOWLEDGE.

With respect to dynamic knowledge, it may be divided into two classes, potential and actual. Potential dynamic knowledge must be judged of by general analogy. The history of science has furnished many instances of the great value of knowledge whose practical utility would have been questioned even by its discoverer. Perhaps no better illustration of this can be cited than the discovery of electro-galvanism through Galvani's experiments with frogs' legs, and which may be regarded as the fundamental principle underlying the invention of the electric telegraph. It is at least well settled that the utility of any class of scientific knowledge can not always be foreseen. Such knowledge must, in great part, be pursued for its own sake. Direct experiments with nature may be safely undertaken at any time. Not all, of course, will ever result in any practical advantage beyond that secured by the scientific discipline acquired in making them, and many must necessarily be made which it would have been better not to have undertaken. But it is easy to place too narrow an estimate upon apparently useless results thus brought out. Even if it could be positively proved that they could never possess any dynamic value, it must not be forgotten that they may possess great ethical value.

Let us take the case of the recent spectroscopic discoveries respecting the constitution of the celestial bodies. Granting, as no scientific man will unreservedly do, that such discoveries can never in the remotest degree serve to improve the material condition of man, it still remains clearly obvious that they do very considerably tend to improve his moral condition. Just as whatever contracts the mental horizon correspondingly lowers the moral condition, so whatever expands the mental horizon equally elevates it; and the consciousness of having even partially solved so transcendent a problem as the constitution of the sun, the fixed stars, and the nebulæ, affords to the awakened intellect that appreciates this truth an inspiration which raises it irresistibly to a higher plane of thought and action.

There are many other kinds of scientific investigation of which the same is true. Those of biology in most of its departments are of a similar character. Aside from the elevating effects of an intimate communion with nature in its highest manifestations, the knowledge thus gained, if properly co-ordinated, tends directly to throw light upon the question of man's own nature and origin, than which assuredly no problem can be more important to man. Every new conclusion thus reached widens his views of humanity, prolongs it into the past, and identifies it more completely with all other life, while at the same time it vastly increases the prospects for higher reaches into the future.

But knowledge of this latter class, though now chiefly potentially dynamic, already approaches so nearly the actual state that its application can be divined.

The power of intelligence to modify vital phenomena, and create such products as it may elect, has been abundantly demonstrated in many departments of life. Its application to human life is no longer a question except of method. With a greatly enlarged fund of biological knowledge, the complete subjection of the vital forces to human control may be confidently expected.

While potential dynamic knowledge is chiefly confined to the outer boundaries of science, either to excessively remote, minute, or complex phenomena, the field of actual dynamic knowledge is well known. Restricted to the phenomena of the more simple and positive sciences, its field is so clear that desired ends can be readily foreseen and the necessary adjustments made to secure them. The normal product of this class of knowledge is some form of invention, or applied discovery, which is the sole form of human action that results in social improvement. Upon this subject enough has already been said (*supra*, p. 376).

PRINCIPLES OF CERTITUDE.

We will now consider, more specifically than has hitherto been done, the nature and sources of knowledge, having chiefly in view to determine the relative certainty of its different classes, or departments.

We have already seen that a broad distinction must be drawn between the mere capacity for receiving truth and the actual possession of truth by the knowing faculty. The nature of knowledge must, therefore, partake of the nature of truth.

Material objects possess, or perhaps, more correctly speaking, consist of, certain properties, *i. e.*, they have certain modes of appealing to the senses, whereby the latter become conscious of their presence. Every such conscious impression is a thing known, and whatever it be, as long as it is remembered, it constitutes so much additional knowledge, viz., that such a quality belongs to such an object. The fact that the quality inheres in the object is a truth, and when thus apprehended by the primary faculty of the intellect, the senses, it becomes knowledge. Now, the judgment, as was seen (*supra*, p. 416), is the power by which the mind detects the *same* quality in different objects. This is done by comparing the sensations produced by the objects. The ideas thus acquired, viz., that a certain quality is common to two or more objects, are of a secondary character, and yet they depend as absolutely upon the primary sensation as do the primary perceptions. When we pass to the third faculty, viz., the reason, the same is equally true. For, as was seen, reason is only that faculty of the intellect by which special truths are deduced from general ones. The general truths which form the premises are of the nature of judgments or propositions, and so is also the special truth sought, or conclusion. Throughout the process of ratiocination, we are dealing with ideas, or relations, and not with sensations, or experiences—with notions of the *identity* of qualities and not with the qualities themselves; yet had those qualities never existed, or had they never been cognized, it would be impossible to evolve ideas from them.

There is, however, another basis of classification of knowledge, namely, with respect to the degree of certainty. All knowledge may be arranged under two general heads, as either absolute or probable, in either of which it may be either positive or negative.

The field of absolute knowledge is for man exceedingly limited. Probably the only instances are to be found entirely outside the domain of real facts and actual existing things, being confined to the acquisition of truths by the aid of reason where the premises are purely hypothetical. Hence the truth, though apprehended infallibly, is nevertheless wholly conditional. In other words, we may know absolutely what *would be* if certain other things were true. But this we can not absolutely know. Logic and mathematics furnish the only examples of this kind of knowledge, both of a positive nature, as in all direct demonstration *a priori* from assumed premises, and also of a negative character, as in indirect proof, or the *reductio ad absurdum*. It will be observed that even here it is necessary to suppose that the mechanical labor has been performed without error, and although errors of this nature are very common, still, since such errors can at all times be corrected till absolute exactness is reached, this fact does not change the absolute character of this species of knowledge. With respect to the last classification, all such knowledge must, therefore, necessarily belong to the third degree.

But it is said that there are some truths which are "intuitive," and which the mind never is called upon to acquire, or the intellect to apprehend—first truths, necessary knowledge, without which the mind can not even reason upon assumed premises.* Most philosophers claim this, and some have even maintained that we should know these truths if we had no senses at all. With regard to this latter notion, if I have correctly analyzed the human understanding, it would be equivalent to saying that we should know these truths if we had no mind at all, since the mind not only embraces the phenomena of the senses, but the senses themselves actually embody all the elements of the mind; *i.e.*, nervous matter alone is sentient; and sensation, which implies consciousness, is the element out of which all the phenomena of mind are developed. Let us, then, consider for a moment these so-called intuitive conceptions, or necessary truths.

It is claimed by these "nativists" that all truths of this nature must be known to the intellect without any process of reasoning, reflection, or comparison. For example, it is said that it would not be possible to be ignorant of the truth that the whole is greater than any of its parts, that only one straight line can be drawn between two points, that two straight lines can not inclose space, that a larger object occupies more space than a smaller one, or that a man can not be in Washington and New York at the same time. These, it is claimed, are truths that all must know without effort, being alike necessary truths and necessary knowledge.

We will first inquire whether these truths form a separate and well-defined group in which they naturally place themselves, so that no doubt can exist in the mind as to whether any of them actually belong to this group. For, if there be any such doubt with regard to any, it argues a gradation, and destroys the distinctive character of these truths, and this alone is sufficient to overthrow the doctrine. Are there, then, any doubtful cases in which one would hesitate before assigning them a place among the intuitions? It is clear that there are many. That the whole is greater than a part may seem clearly an intuitive conception. That the sums or differences of equals are also equal scarcely requires an effort of the mind to comprehend it. But with regard to the equality of the products and quotients of equals, though not difficult to see, this is certainly not so apparent. It requires a slight effort of the mind.

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* Cousin, "Du vrai, du beau et du bien," pp. 41, 98, 443; Sir William Hamilton, "Metaphysics," Lecture xxxviii; Carpenter, "Mental Physiology," p. 408.

Between two points only one straight line can be drawn. This is clear enough, as is also the proposition that a straight line is the shortest distance between two points. Yet some of the text-books give these as axioms of geometry, while others proceed to demonstrate them. The same is true of the proposition that the angles about perpendiculars are right angles, or the converse.

Again, two straight lines can not inclose space. No proposition can be more certain or apparent than this, yet it may be demonstrated. It is not quite so clear that the sum of adjacent angles is equal to two right angles, or that the interior and opposite angles formed by parallels are equal. They are usually proved to be so. It is but a step further to declare that the three angles of a triangle are equal to two right angles, or that the squares of the base and perpendicular of a right-angled triangle are together equal to the square of the hypotenuse. We have now reached somewhat deep water, and might carry it on to the most complicated theorem of geometry. There is no difference in the *trueness* of these truths. One is as true as another. Truth is absolute, but knowledge is relative. We therefore see that in mathematics, at least, there is a regular gradation in the ease and certainty with which the mind is capable of grasping truths.

It is the same in physics. Nothing can be in two places at once; that is very clear. But, though evident that a man can not be in San Francisco and New York the same day, yet, in the present state of conveyance, he may be in both places the same week. Neither can a man become a stag in the twinkling of an eye, yet the transformations of insects and amphibians would be scarcely less incredible were they not so well established by observation. Credibility rests on experience.

To one acquainted with the solar system it would seem impossible for the earth to cease any of its motions, at least suddenly, but here we are verging upon the doubtful, and, when we declare the solar system to have been evolved from a gaseous mass, we have reached the point of speculation.

We see, therefore, that there is a gradation, not in the truth of these statements, for every one of them is either true or false without the least reference to our opinions, but in our knowledge of their truth, and, if this be so, that knowledge can never be absolute. In many cases it is amply sufficient and satisfactory to us, but this is only moral, or practical, certainty, and not absolute, or theoretical, certainty. So that the doctrine of necessary knowledge can not be maintained, if by it is meant that there is a distinct class of truths which the mind must necessarily know without effort. On the contrary, the intellect is both subjective and active, while all truth is both objective and passive. Therefore there must be a gradation in knowledge arising from the varieties of truth with respect to the quantity of intellectual force required for their apprehension, coupled with the degrees of activity and power which different intellects possess. What is a first truth, or intuitive conception, for one intellect is the result of study or reflection for another.

It would seem to follow, from these premises, that even in the domain of mathematical demonstration no conclusion can be absolutely certain which involves an axiom as one of its premises, and this would sweep away the entire department of absolute knowledge. Still, the knowledge thus obtained is surely sufficient in point of certainty for all practical purposes. Indeed, it would seem that there are many axioms which any intellect capable of grasping them at all could scarcely fail to accept; it could not, at least, question their truth.

But the foregoing considerations do not by any means furnish the only evidence which can be brought to confute the doctrine of necessary knowledge. If any such knowledge exists, then, being necessary, it must be universal. It can admit of no exceptions. For example, if the mind is obliged to reject the belief in a physical impossibility from the nature of the case, then no case can be cited in which any one has ever possessed any such belief. Otherwise the knowledge is no longer necessary, and the doctrine of intuitive knowledge falls to the ground. Yet what are the facts? We find, on the contrary, that the human mind has found no difficulty in accepting the most palpable absurdities, the most impossible propositions, and the most obvious violations of every physical law. The Asiatics in particular are proverbially imaginative, as it is called; which consists not only in a great facility for creating unreal and fantastic mental images, but in actually receiving the same as true and possible. An Arab finds no more difficulty in believing it possible for a man instantly to become a horse than he does in contemplating a removal of his tent. To him the enchanted tales of the "Nights' Entertainments" are not, as with the European, an indulgence in idle fancies known to be impossible; but, though he may believe the particular stories to be fictitious, he yet conceives that they or their equals might be true. Nor is this confined to Asia. Perhaps one half of the people of Europe and America to-day sincerely believe that a certain woman of ancient times was instantly transformed into a "pillar of salt"; that on certain occasions water was turned to wine; that in one instance the sun and moon stopped in their apparent motions for the space of twelve hours; that a man lived three days in the belly of a whale and came forth alive. And many still reverently believe that on certain occasions a piece of bread made by human hands actually becomes a part of the body of a man who lived and died nearly nineteen centuries ago, and that common wine becomes in real truth his blood. And yet philosophers tell us that the human mind is incapable of not knowing that such things are impossible. The doctrine of the creation of matter out of nothing is analogous to this. It can not be reached by any faculty of the mind. Reason revolts at it and declares it impossible. Facts and tests belie it and demonstrate its absurdity; and yet the whole world, with a handful of exceptions, go on believing it with as much ease as though it had been proved in Euclid.

We see, then, that the doctrine of innate, intuitive, or necessary knowledge is wholly untenable, and that all we can expect to know must have some degree of probability, and must be sought and acquired by personal efforts. But though there are no such things as innate ideas, the belief in which has arisen from a confusion of the intellectual operations of the mind with the result of those operations when applied to legitimate objects—a confounding of intellect with knowledge—still there are obviously two quite distinct classes of knowledge due to the different methods by which it is acquired. The first may be called deductive, or *a priori*, knowledge, the second inductive, or *a posteriori*, knowledge. One difference between them is this: knowledge of the first class must be learned as well as that of the second, but, once learned, it is not possible for the mind to doubt or for different minds to differ in opinion respecting it. With regard to knowledge of the second class, on the contrary, we may conceive the non-existence or even the contradictory of an *a posteriori* truth,* and different minds may differ in opinion concerning it.

If an *a priori* truth is comprehended at all, it must be comprehended as true. Once fairly acquired, it is felt to be either logically or physically necessary. Deductive truth is necessary in the impossibility of its being otherwise, while inductive truth is only necessary in actually being what it is. The first is a subjective, the second an objective, necessity.

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* Spencer's universal postulate of the "inconceivability of the negation" does not apply to this class at all. Yet he recognizes it as the most important kind of truth. ("First Principles," p. 85.)

Now, the imperfection of human knowledge is of two kinds, according as it is caused by ignorance or by error—by the absence of ideas or by false ideas.

With reference to truth of the first class mentioned above, viz., deductive, or *a priori*, truth, the mind may be in ignorance of it, but it can never be in error concerning it. With reference to the second class, however, viz., inductive, or *a posteriori*, truth, the mind may be both in ignorance and in error respecting it.

But it must not be forgotten that the data for all knowledge of the first class must first be derived through sense-perception, and its higher premises must first be established as knowledge of the second class, which is, therefore, chronologically the first.

We must here take leave of positively certain knowledge, which can only exist as a conclusion from hypothetical premises purely, so that, even if one of those premises is an axiom or a physical necessity, its truth must be assumed as a postulate, while the process of ratiocination, also necessary to reach that conclusion, must be presumed to have been performed without error. This knowledge, when the contingencies are granted, becomes absolute, yet it always depends upon two or three contingencies which are in themselves merely uncertain propositions. It is evident, therefore, that it is to the class of uncertain, or probable, knowledge that our chief attention should be directed. And, first, we observe that there are various grades of probability, from that which is sufficiently certain for all human purposes to that which is mere speculation. The most reliable knowledge which it is possible to obtain is the direct testimony of the senses. The senses, in fact, as has been shown (vol. i, p. 381), furnish the materials of all knowledge, and but for them no truth could be apprehended. Therefore, all knowledge must depend entirely upon these sense-impressions; *i. e.*, the truth of all secondary or tertiary ideas—all judgments and conclusions—must depend upon the primary perceptions, of which they are the elaborations.

With regard to the certainty of these primary perceptions, it may be laid down as a rule that, when they are distinct, they are sufficiently certain to be safely made the basis of any human action. There are, however, a few exceptions to this rule. One is, when the organ of sense is in a diseased condition. In this case it is liable to mistake the true nature of the object cognized. The principle which renders these mistakes possible seems to be that, owing to the diseased state of the apparatus of cognition, it is constantly experiencing unnatural changes in itself, and these are liable to be taken for, or confounded with, the changes produced by the contact of the external object. And, of course, the same is true of all the senses when the whole body is in a diseased condition, especially if the disease is of a nervous character.

A second case of unreliability of sense-impressions is where there is an effort made by one person to deceive the senses of another. This is illustrated in jugglery, or legerdemain. Arrangements may be made well calculated to deceive the senses, and great success in this direction has been attained. It is here that the high authority of the so-called intuitions is rendered most apparent. A juggler may succeed in deceiving the subject into the conviction that he has blown a large potato out of his nose, or extracted a live rabbit from a boiling pot, but, when the case is appealed to the "court above," the decision is always reversed. He can deceive and elude the senses, but he can not convince the judgment. This judgment is, however, founded upon experience, and this experience is nothing more than the concurrence of many sensual perceptions opposed to the one now experienced, so that, after all, it may be reduced to a preponderance of homogeneous experience.

Again, the senses often deceive us in taking casual observations of nature under extraordinary circumstances. The mirage is a good illustration of this fact. But such illusions are of every-day occurrence. Objects look colossal through a mist. They appear diminutive when viewed at a nearly vertical angle, either up or down. Two trees standing a short distance apart on a distant hill appear much farther apart than they really are. A marble seems like two if laid between the fingers when they are crossed. All these and many other similar phenomena are generally regarded as proofs of the unreliability of the senses under unusual circumstances. And so they may be taken to be, so far as our present subject is concerned. But, when such phenomena are more closely examined, they are found to be errors of judgment, owing to circumstances surrounding them, to which the mind is not accustomed. The senses communicate the impressions just as they receive them, but the general phenomenon is of a secondary character, and requires an act of the mind upon those impressions as the basis of comparison. This judgment is the same as is usually rendered under ordinary circumstances, but the circumstances being in these cases extraordinary, the judgment is erroneous. This is the true explanation of these illusions, and, by a parity of reasoning, it might be also applied to the solution of all tricks of legerdemain, so that, unless in a diseased condition, the senses themselves may be regarded as wholly reliable.

Every separate act of the mind, in acquiring an idea, involves a certain degree of uncertainty. There are, as it were, loop-holes between each successive step through which the truth is liable to slip out and escape. There are three degrees of knowledge, each requiring one additional step, or separate mental act, to reach it from the one below it. These ideas may be denominated respectively perceptions, judgments, and conclusions, and the knowledge thus acquired, primary, secondary, and tertiary. We have already considered the primary perceptions, and find them of a very high degree of certainty, the highest to which our faculties are capable of attaining.

In passing now to judgments, and applying the rule, we see that the degree of certainty has been diminished by one step, or chance. A judgment is expressed by a proposition. A proposition is a comparison of two terms (a term being merely the expression of a sense-impression), whereby they are declared to agree or disagree. This comparison requires an act of the mind in passing from one impression to the other, and it is in this second act that the second liability to error occurs. Therefore, the certainty of a judgment is one degree less than that of either of the impressions compared. The only way to diminish the liability to error is, as in every thing else, by care and pains in the act of the mind, in the same way that the original conceptions can be rendered more certain. This constitutes verification, and is accomplished by the repetition and variation of the experience.

In tertiary ideas, or conclusions—being due, as we have seen, to the evolution, by an act called ratiocination, of a third proposition from two others having a certain relation and containing both the terms of the conclusion—we find that the certainty has again suffered a diminution by this third mental act. The liability to error consists in this case, as in the last, in the possibility of employing erroneous premises. If the premises are true the conclusion must be true, the same as was explained with regard to hypothetical premises. Since conclusions are themselves but propositions, as well as the premises from which they are evolved, the question may arise how a judgment is to be distinguished from a conclusion. This depends wholly upon the point of view of the person employing it. Any two propositions in which there is a common term may be made to unfold a third proposition, or conclusion. Now, if the mind of a particular person accepts these premises without further proof, they are to such a mind judgments, from which he draws the conclusion which to him is a new truth. If, now, he proceeds to make use of this new proposition as a premise from which to deduce a second conclusion, it has then ceased to be a conclusion, and taken its rank as an ordinary judgment. Thus a proposition may be made to serve both as a judgment and as a conclusion, according to the manner in which it is employed, but in case it is not satisfactory to the mind it must itself be proved. Almost any thing can be demonstrated by logic, provided we are satisfied with the premises employed. The greatest sophisms may thus be maintained. It was owing to this that logic at the time of Bacon had fallen into such disrepute.* Previous to that time it had been the custom to take generalities as premises, and no one seemed to think of the possibility that they might need proving as well as the conclusions derived from them. They were usually old, established maxims of ethics or metaphysics which no one dared to dispute.

It was then assumed that these were included in the number of first truths or axiomatic ideas, and served as a basis below which it was impossible to go. Because, they said, there must be some starting-point, we must admit something, or else we can not reason at all. In this and in this only they were correct. Because we must believe something, however, it does not follow that we must admit these particular maxims. What that something is that we must admit in order to reason, we will next endeavor to ascertain.

The questions might arise now, as they arose then, If conclusions are convertible into premises, and *vice versa*, is not the process indefinite? Must not every proposition be proved by just such unproved premises *ad infinitum?* If all premises must be proved, where shall we stop? Would it not render all attempts to arrive at truth hopeless? The answer is, that the necessity of a basis is not denied, but the avoidance of an erroneous basis is demanded. It has been shown that the degrees of certainty in the modes of acquiring knowledge correspond with the degrees of proximity which the process occupies to the first and original portals through which the mind receives the materials of all knowledge—the senses. Here alone is the real key to the truth of every proposition. Let it be followed back to the door through which all its elements were originally admitted. Seek out the clew that leads back through the mazy labyrinth of complex mental operations to primary experience, and there at the entrance examine the records made by the senses and see whether those elements are there registered. Every proposition which it is possible for man to know can be thus traced, and every proposition which can not be thus traced must take rank with the unknowable. This is not only the rule to which all induction must conform, but it is the great comprehensive gauge for harmonizing opinions with truths and reconciling ideas with realities.

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* "Instauratio Magna, Praefatio," "Distributio Operis." ("Works," vol. i, pp. 211, 214, 220.)

That every knowable proposition can be so traced may be readily shown. Take, for example, the proposition that the earth is globular. It appears level; but if a man could start from Quito in any direction whatever, and travel in a right line a distance of twenty-five thousand miles, he would find himself at exactly the same spot from which he started. He would thus have ocular demonstration of the truth of the proposition. If I look across a sheet of water, and see the topmast of an advancing vessel, and afterward the sails and rigging, and lastly her hull, I have demonstrated in the most certain manner possible, not that the earth is a sphere, but that that sheet of water has a curved surface; and, if I repeat the experiment in many seas with the same result, the certainty of the original proposition becomes sufficient.

As a second illustration, suppose some one to maintain the proposition that there is iron in the sun. He may have arrived at that conclusion by a process of reasoning. Suppose him to have deduced it in the following manner: God always supplies useful commodities to intelligent beings.

The sun is inhabited by such beings, and iron is such a commodity, therefore there must be iron in the sun. If disputed, he might prove that the sun is inhabited in the following way: The sun is a much greater and more beautiful world than the earth, therefore it is not reasonable that God would place intelligent beings upon this earth and not place them also upon the sun.

Suppose, now, we endeavor to trace this argument back to the original source of every conception involved in it. Since terms are only the expressions of these conceptions, we must take each term and analyze it. The first term, "God," is found to consist of a variety of conceptions vaguely confused together, and, when stripped of imaginary elements and tested by the light of science, appears, as was shown in my remarks on religion (*supra*, p. 269), to say the least, to lie wholly outside the domain of human knowledge. If such a being exists at all, man does not, and in his present state can not, know it.* His existence, if a truth, is one that can not be apprehended by the intellect. The first premise, therefore, which predicates a fact of this term, must fall with the term itself. Not that it is disproved, but that it can not be proved. The chief proposition of the second premise—that the sun is inhabited by intelligent beings—must submit to the same analysis. The sun can be cognized by the sense of sight, but we thus obtain a very imperfect notion of what it really is. The first time an intelligent being should see it, he might think it was a mile off and as big as a large hat-brim. The early impressions which any one gets of it now are very different from this, because every child is taught something which science has already revealed concerning it. Newton has analyzed its rays, astronomers have calculated its distance, its magnitude, its motions, and its attractive force, and now more recently chemists and physicists have commenced to make discoveries as to its condition and its constitution. Among other relations which the last-mentioned class of experimenters have made, they have discovered that unquestionably there *is* iron in the sun. They have demonstrated the original proposition, and have established it by the highest form of proof—by the senses. For, though they can not see the iron itself, yet they can see one of its invariable modes of manifestation. And, indeed, that is all that can be done; for, when we see and handle that metal, we only cognize its qualities, *i. e.*, these various modes of manifestation. We know nothing of its essence. When we see it, we only note its mode of appeal to the eye; when we handle it, to the nerves of feeling; when we strike it, to the ear. When we lift it, we only learn its weight, *i. e.*, the force by which the earth attracts it, which, when further reduced, shows us simply its density relatively to other substances. All these are its properties simply, and these are all we can know. But it is found to have other properties not manifest at ordinary temperatures. These, when thoroughly examined, are found to be just as regular and characteristic as the more obvious ones. One of these is its effect when volatilized of producing certain bands upon the spectrum, in a fixed position, and it is by means of this effect that its presence in the sun has been rendered so certain; for that one distinct property is sufficient, though of course not so absolutely conclusive as a greater number would have rendered it.

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* Kant says: "Zwar wird freilich sich Niemand rühmen können, er *wisse*, dass ein Gott . . . sei; denn wenn er das weiss, so ist er gerade der Mann, den ich längst gesucht habe." ("Kritik der reinen Vernunft," S. 546.)

But let us not renounce our plan of testing this proposition when reached by other means, because, while seeking to prove one of the previous premises, viz., that the sun must be inhabited by intelligent beings, we have found it true in another and entirely independent manner. We have traced back the first term of this premise, "the sun," to the true source, viz., our whole knowledge of it as revealed by the senses. Let us now examine the remaining term, "intelligent beings." What do we know of them? Of course, we refer to man exclusively, a being cognizable by all our senses.

We know what he is, what he is capable of doing and enduring. Putting our knowledge of man with our knowledge of the sun, and what are the prospects that beings like him dwell there? To say that some other kind of intelligent being, differing utterly in all other respects except that of intelligence, dwells there, is once more to abandon the field of possible knowledge and rely again upon these general assumptions which have already proved so unreliable. In the first place, then, the very condition necessary to our discovery of the presence of iron is that the temperature of the sun be such that that metal is in a gaseous state—a heat greater than it was possible for man to create until the modern electric appliances were discovered and employed. Of course, then, this second premise must be false, if by intelligent beings man, or any other sentient creature known to this world, is meant. Both the premises upon which it was first proposed to rest this question are thus shown to be fallacious. The fact that the conclusion drawn from them happens to be true, is not the least excuse for employing them. So far as they are concerned, it might as easily have been false. Nor is this an extreme case. It is exactly the manner in which people reasoned down to the age of Bacon. They piled up their syllogisms and *sorites* mountain-high, till they threatened to deluge the world with so-called logic.

The true basis of knowledge is the primary apprehension of truth by the senses, and the mode of reaching it is the thorough analysis of every term of a proposition, and the discovery of the original conceptions upon which it is founded. This view is perfectly rational; for the object surely should be to arrive at the greatest possible certainty, and since, as has been shown, the most certain mode of apprehension is by means of the senses—and for the obvious reason that it is the original mode, so that of course no secondary apprehension could possibly be any more certain, because a conclusion can not be any more certain than the premises from which it is deduced, but, on the other hand, all the chances are in the direction of rendering it less certain—it follows that this mode is the very most certain possible.

Speaking generally, then, no important proposition should be deemed to have been satisfactorily established until it has been subjected to the test of a thorough scientific analysis, and found to be based upon either some tangible material *thing*, or object, cognizable by the senses, or upon some certain natural *law*, established by inductive experiment, or else upon some real *fact*, or physical change, actually known by sensual demonstration to have taken place in such matter by the operation of such law. In other words, it must be proved to be founded upon truth, and these objects, laws, and phenomena constitute the three departments which embrace all truths.

We saw a few pages back that verified primary knowledge of nature may be, and constantly is being, diminished in *value* by a process which we called attenuation, and which may not inaptly be compared to the degeneration of living creatures by successive "breeding in-and-in." We are now to consider how such primary legitimate knowledge may be, and constantly is being, diminished in *certainty* by a somewhat analogous process.

There is one way in particular in which the certainty of knowledge is diminished, which has received much attention. I refer to the effect of communication between different persons, whereby knowledge once apprehended by the intellect of one person is conveyed and imparted to a second, by the second to a third, and so on, to an indefinite number of individuals. It is true that each individual apprehends the given truth by some of his senses, but the first one alone employed the particular senses, and in the legitimate manner for receiving the original idea. But for him none of the others could have ever received it. He may have delved into the hidden recesses of nature and expended a life-time in bringing it to light. All the rest acquire it in a moment by hearing it uttered, or by reading it in a book.

The effect of these successive communications is to diminish the certainty of the original knowledge at each remove from the first discoverer. This effect is produced in many ways. Suppose it to have been such a truth as that above described. The discoverer in his long and protracted researches, when he had at last secured it with certainty, would naturally seek to promulgate it with the greatest care, guarding it sacredly with technical terms long pondered and precise in meaning. Cast forth, at last, thus guarded, upon the faithless ocean of loose speech and careless thought, it would, with a few buffets, be stripped of its precision, divested of its technicalities, distorted from its original meaning, and exaggerated into a myth or degraded into a platitude. It must run these risks, and, unless means are afforded for its repeated elaboration anew, and for its easy demonstration by true tests, it soon becomes lost like a vial of nectar poured into the sea.

Hence, the prominence which this subject has assumed in all discussions upon the certainty of human ideas. That much time and energy have thus been wasted, and that the true considerations involved have been largely disregarded, I am satisfied, and shall now endeavor to show.

Both the parties to controversies of this class have seemed content to rest their case upon the nature and reliability of human testimony respecting all points whatsoever, as if there could be no essential difference in the subjects of testimony. In other words, they have given the same weight to such testimony as tended to establish an absurdity or a physical impossibility as to such as tended to prove an ordinary probability, and, if only the evidence was made equal, they have been satisfied to regard the certainty equal also. They have practically ignored the internal probability of the allegations made, *i. e.*, the quality of *propositions*, and depended wholly upon the quality and quantity of *evidence*.

In point of fact, the certainty of a proposition, depending altogether upon a chain of human testimony for its credibility, is to be judged of intelligently only by finding first in which of the three departments of truth named above it will belong if true—whether in the department of things, of laws, or of facts. Two cases can not be parallel, one of which lies in one and the other in another of these departments—not, at least, if one lies in the last named. For, amid all the liabilities to error—first in the original apprehension, in which these liabilities are increased the further we go back into the ages of ignorance and imagination, and again in its long tradition through thousands of individuals during the lapse of centuries—any statement whatever becomes utterly unreliable. It may, it is true, have been preserved unchanged throughout all these vicissitudes, but, where this is true of one, it would be otherwise with thousands; so that testimony alone is worthless. It must have something more substantial to rest upon. Now, the statement of a mere fact, an event which has occurred centuries ago, if substantiated by testimony alone, can not be credited. Why? Because it can not be reproduced. It can not be verified. Not so with affirming the existence of a thing. Things, in the sense here meant, are eternal; for, if they have so far changed their form as to have ceased to be recognizable under the same name, they have ceased to be things, and passed into the domain of facts. Therefore, if the existence of a thing at a remote period in the past be affirmed and supported by testimony, the testimony is equally worthless as in the prior case, but it is no longer absolutely necessary. The thing still exists, and may be produced, and the controversy ended. It is for this reason that historians so highly value every little monument of those nations long passed away whose history they are endeavoring to trace. Every rude pot, every coin, every graven image, every carved pillar, is a material substance, and, so far as it can speak, its testimony is absolutely reliable. It is this principle also that gives to literature its immense importance with respect to history; for manuscripts, books, or libraries, are things which exist and speak with many tongues.

We see, therefore, that, as far as testimony itself is concerned, it is of little or no value: the certainty of the alleged truth depends upon its susceptibility to reproduction or proof. So that, when we are told that we rely for almost all our knowledge upon what others tell and teach us, though we must admit this, and nowhere more than in matters of science, yet it is only valuable and reliable when we remember that those truths still exist, and that we can easily satisfy ourselves, if we are disposed to doubt, by reproducing them in the same manner as our informants and our teachers originally acquired them. It is only by testimony that I am able to affirm that such a city as London exists. Yet I am sufficiently certain of it, for my informants would have no inducement to misrepresent a thing so easily proved.

But when I am told that the whole world was overflowed to the tops of the mountains four thousand years ago or more, that is an event to which, though possible, and a widespread human belief, I am obliged to give a widely qualified credence. It is only an alleged fact, long past, leaving, as far as known, nothing which still exists to testify to its truth. The accounts of it, if it ever happened, were evidently written after many ages of bare tradition. I am far better satisfied that, at a very much more remote period of the earth's history, there were no mountains upon its surface, and it was nearly or quite wholly covered with water, because there exist objects of a tangible nature which go to prove that such must have once been the case.

Thus much for the reliability of testimony when considered in connection with the different species of truth of which it claims to acquaint us. Let us next consider it in connection with the different kinds of knowledge.

Knowledge was seen to be either absolute or probable. Absolute knowledge is confined to conclusions drawn from assumed premises. Probable knowledge was shown to be of various degrees of certainty, according to the faculty of the intellect by which it is apprehended, the highest degree being found to be the original conceptions resulting immediately from the impressions of the senses. A succession of these conceptions constitutes experience, and the same conception many times repeated enables the mind to establish principles or laws.

We discover these laws, therefore, in the same manner that we discover objects, or things—by induction. The fact that we do not specially search for many of them is no proof that they are less reliable when discovered. It shows rather that they are only more common, and do not require great research, and if possible they must be more certain, the induction being on a more extended scale, and the experiments being repeated a greater number of times. These laws, then, are without doubt the most certain knowledge which we ever acquire. Harmony with these laws we hence denominate physical necessity, and violations of them physical impossibilities.

Notwithstanding this, strange to say, such is the superficial character of men's deductions that they have always been setting up testimony which in itself, as we have seen, is almost valueless, when it extends back for centuries into the past, to invalidate this highest of all possible forms of knowledge. New and profound researches into nature have, it is true, shown us that in some cases these apparently intuitive principles need to be qualified and expanded to embrace wider cycles of truth, and these revelations often disclose important fallacies, but even these never have moved the common axioms from their foundations. The impression that human testimony, wafted down on the memory through the ages, could ever suffice to shake those foundations, can only be regarded as a melancholy proof of man's irrationality.

The chief argument of one of the parties to such controversies has been directed to sustain facts which the other party declare to be physical impossibilities, and which are alleged to have occurred many centuries ago, but in proof of which certain written records—not the original records, but copies and translations of them—still exist.

In the first place, being mere statements of events that have occurred, they belong to the class of propositions having the least antecedent probability. They can not be reproduced nor verified. In the second place, unlike the facts of geology or archæology, they have left no monuments, actually caused by them, to mark either the date or the fact of their occurrence. In the third place, the written testimony to their occurrence is in the past tense, showing that some time at least must have elapsed from the time of the occurrence to the time of the record. In the fourth place, the records are not in any case the original ones. Lastly, the evidence all goes to show that the parties who originally made the records and those who have copied, translated, and handed them down, have all had the highest kind of personal interest in maintaining their truth. And when we take into consideration the further fact that, in the ignorance of the ancients, such marvelous statements were of general credence; that they are not by any means confined to those which have been so strenuously supported in modern times, but embrace others, which the advocates of the truth of the latter cast aside as mere superstitions, but which are believed with equal reason to have also taken place; and that since that time others equally marvelous have been vouched for by just as good authority, and about which the religious world is divided in opinion, the division line being in most cases nothing better than that which divides the different sects—when we take all these circumstances into consideration, we must indeed be blind not to see that the foundation for such allegations is laid in the sand. As against the established laws of nature—established, as I have shown, by the very widest and most thorough induction—these alleged violations of those laws no longer possess any reasonable credibility.

Again, a fact is only a change produced in matter according to some law or necessary principle; therefore, no statement of a fact is satisfactory unless we can either actually cause the occurrence of a sufficient number of similar facts to deduce the law from them, or else can account for it by the aid of laws already known to exist. But the facts alleged to have occurred, and respecting which so much controversy has arisen, come under neither of these classes. They are in violation of all the laws known to exist, and each has never occurred but once, so that no other higher law could have been deduced. For, as before remarked, all the laws we now know have been deduced from long experience and observation of the repeated occurrence of the same fact under the same circumstances.

Now, the mind can not conceive of a phenomenon without a principle to explain it by. For the phenomenon is but one observation, while the law which it violates is the result of thousands of observations; and, though the one may be apprehended very distinctly, yet it can not outweigh the great preponderance in the number of experiments against it. *A fortiori*, then, it can not be for a moment entertained when it rests entirely upon human testimony diluted by the influence of ages of time.

The success of society as a system, and of the human race as inhabiting this earth, will depend upon the good sense displayed in keeping the intellect safely anchored upon the firm ground of original knowledge; in checking the tendency to prefer its highly derivative forms which render existence a mere pantomime, and to put its trust in allegations which, for any cause, lie beyond the reach of verification. The only sustaining knowledge is that which lies close to earth, which continually knits the physical being to his environment, and does not ultimately depend either upon memory or upon tradition. It is knowledge of this kind which is called scientific, and it is the possession of these original, first-hand qualities which distinguishes scientific knowledge from the prevailing forms of knowledge. A glance is sufficient to show how great this difference is. There are influences at work which tend, even now, to convert popular knowledge into scientific knowledge. Much of the former may readily be thus converted. Its present worthlessness is not due to its inherent nature, but to the form in which it is acquired, and the use that is made of it, or perhaps, more correctly speaking, to the failure to make any use of it. The illustrations of this are every-where obtrusive. They may be found in the knowledge of human history, of literature, of language, of art, and of the descriptive sciences. It might be easily shown that all of these and many other branches of learning furnish valuable data, which, scientifically viewed, acquire a dynamic importance. In all such cases, therefore, the great need is that the knowledge possessed be utilized, that its manifold relations be perceived, that it be apprehended genetically, that the things known be traced back to their origin, and that every fact be carefully put away into its proper niche in a system of consistent thought.

DISTRIBUTION OF KNOWLEDGE.

That "knowledge is power" has probably been faintly perceived by the wise of all ages, and was quite distinctly formulated by Lord Bacon,* who also had a clearer conception of what true knowledge consists in than either his predecessors, his contemporaries, or than many at the present day. It would probably be regarded as a truism, if not actual tautology, to say that knowledge, to exert its power, must be possessed by the mind. And yet no belief is more prevalent, tacit if not avowed, than that knowledge in possession of a few individuals sufficiently avails for all. But, aside from the fallaciousness of this belief from a logical point of view, it is exceedingly injurious in its practical effect upon society. It is no more possible for one person to do another's knowing than it would be to do his eating or drinking. A man's knowledge may make him a philanthropist, but it can not prevent another's ignorance from making him a criminal. The knowledge which makes one class moral and upright citizens exerts no influence in reducing the immorality of the class which is without it. The knowledge which enables a very few to introduce all the progressive agencies into civilization tends not in the least to render the mass of mankind, though possessing equal average capacity for such service, capable of contributing any thing to that result. On the contrary—and this is a fact of capital significance—this inequality in the distribution of knowledge actually tends in no small degree to render a considerable amount of the knowledge acquired prejudicial to the true interests of society. This fact is dimly seen by many persons, who, unable to assign the true causes, make it serve as a weapon against the diffusion of intelligence; thus adding one more to the already long list of ways in which progress tends to defeat itself (vol. i, p. 75; vol. ii, p. 71).

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* "Scientia et potentia humana in idem coincidunt." ("Novum Organum," lib. i, aph. iii.)

Better to appreciate this anomaly, let us go back for a moment to the principles set forth in Chapter VII under the head of "Modes of Acquisition." It was there shown that the normal forces of society, so long spurred on by want, had, in the early history of social development, impelled mankind to pursue the means of subsistence by whatever mode they could be most successfully obtained, and wholly regardless of the amount of evil occasioned, so long as it was incapable of reacting in such a manner as to defeat the end. It was also shown that, in extension of this principle, after the notion of property had been developed, the pursuit of wealth, *i. e.*, of any thing whatever that possessed a permanent or interchangeable value, came to be regarded as equivalent to the pursuit of the immediate means of subsistence, and was sought in the same manner and spirit. Finally, it was still further pointed out that out of this habit, which had so long been a universal necessity to existence, there naturally grew a distinct derivative mental attribute recognized under the name of *avarice*, in obedience to which the same policy was pursued with unabated energy after the spur of want was withdrawn, and wholly regardless of whether the object pursued was necessary or in any way capable of rendering existence more comfortable or not. So firmly have these characteristics been implanted in human nature that their evil features are very difficult to eliminate from character; and it has become proverbial that we can not be said to know a man until we have had dealings with him, and that one's character may be quite exemplary in all other respects, while in matters of pecuniary gain the passion for acquisition may be so strong that it becomes a habit of life to receive value at every opportunity and to part with it only when compelled to do so, without regard to the accepted theories of proprietary rights. And, quite aside from individual cases, it is still a safe principle of economics that all men will increase their acquisitions in any way which meets no opposition, the milder methods of doing so now in vogue having replaced the ruder ones of early periods in consequence of the inability to enforce the latter, due to the general softening influences of civilization. In human nature at large, there is no supra-normal, or supererogatory, element (*supra*, p. 366), and all forms of business rest upon strictly egoistic principles.*

Those who indulge the dream of a golden age of altruistic morality, when all this shall be changed, and men shall pursue the welfare of others instead of their own, are destined to disappointment, and deserve to be disappointed. Whatever improvement is made in the present system must be brought about by the development of the means of equal self-protection, and not to any marked degree by the growth of altruism. The evils now complained of are due to the enormous inequality of opportunities which different individuals enjoy. But the fact that they do not scruple to avail themselves of these opportunities (and, indeed, those who possess them are really among the most upright members of society), shows very clearly that society is as yet based entirely upon egoistic sentiments.

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* A deed without a consideration is void, and equity will invalidate a nominal consideration.

To this principle must now be joined another, also elaborated in the above-named chapter, viz., that success in acquisition, without regard either to the mode or to the consequences to others, has depended, before and since the mollifying influences of social development arose, upon the same kind of power which enabled man to rise above the rest of creation and subject all other forms of life to his dominion. Intellectual superiority has, from the first, borne absolute sway, and the same power which at the dawn of manhood gave Anthropus his advantage over Anthropoides, now gives the capitalist his advantage over the laborer. There is, however, this qualitative difference, which needs to be insisted upon. Since the origin of society, the part which knowledge has played, relatively to that of mere sagacity, has immensely increased, as shown a few pages back. Not that intellect wholly divorced from acquired experience was ever able to achieve any of the results which constitute the superiority even of animals, but simply that *intelligence* has always advanced at a far greater rate than has intellect, and that the ratio between their rates of advancement has constantly been an increasing one, until now it is in the former, *i. e.*, in the relative amount of knowledge possessed, that nearly all superiority consists.

We are now prepared to understand the legitimate effect of an inequality in knowledge. Those who possess most knowledge upon an average possess most intelligence, the average capacity being every where the same. But superior intelligence, now as throughout man's career, is the attribute through which success is achieved in the pursuit of wealth and the gratification of desire, by whatever mode. It follows that, as a rule, the inequality of *condition* among the members of society is due to the inequality of intelligence, or, what is the same thing, to the unequal distribution of the extant knowledge of the world.

This also explains how it is that superior intelligence seems to be, and in fact is, a positive injury in certain cases. It puts it in the power of a grasping egoism to accomplish its purposes at the expense of innocence and honesty. Such, for that matter, is its universal effect, though in most cases this is to a great degree offset by the corresponding moral elevation which it brings, and also by its salutary dynamic influence.

From whatever point of view this subject may be regarded, there appears to exist no adequate excuse for the present inequality in the distribution of knowledge. The fact that certain individuals possess it proves it to be extant. The great bulk of the labor has already been performed in its discovery and elaboration. Its discoverers rarely claim it as esoteric. It is free, yet for the mass of social units as inaccessible as if its only source were at the center of the earth. The subject should be looked at from the point of view of social economics, and not from that of morals or of sentiment. Where such an immense increase in the dynamically useful classes of society can be so easily secured, it is akin to suicidal to hesitate. Where such a vast saving as would result from the elimination of the criminal class is so obviously feasible, nothing surely short of a lack of complete organic consciousness on the part of society could delay the prosecution of the required measures.

All civilization is artificial. From the point of view of sentient beings—and this is the proper point of view of society as well—that is most natural which results in the greatest advantage. This has always been best accomplished by processes which violate and resist the normal course of nature. Such processes are obtained through human action directed by intelligence. Every force in nature has been more or less controlled by this agency. The last of these to be subjected is that of the intellect itself. Intelligence, hitherto a growth, is destined to become a manufacture. The knowledge of experience is, so to speak, a genetic product; that of education is a teleological product. The origination and distribution of knowledge can no longer be left to chance and to nature. They are to be systematized and erected into true arts. Knowledge artificially acquired is still real knowledge, and the stock of all men must always consist chiefly of such knowledge. The artificial supply of knowledge is as much more copious than the natural supply as is the artificial supply of food more abundant than the natural supply. Nor does the parallel cease here, for the quality of the knowledge which may be furnished by systematic and wise teleological direction is as much better than that of the knowledge of spontaneous experience as the choice viands of the table are superior to the crude pabulum of the spontaneous earth.

And, after all, let those who so love the natural reflect that the certain result of an equal distribution of this product—knowledge—is simply to complete a great cycle of civilization and bring man back once more to nature. For the inequality now existing is unnatural in every legitimate sense of the term. Differences in condition, in possession, in intelligence, and in the degree of happiness enjoyed, depend upon circumstances in the highest degree artificial. Equal distribution of knowledge will bring equal opportunities, and whatever differences of condition still remain will only be such as are due to differences of native capacity. But these are the same and the only differences which exist among animals. They are great there, they will always be great among men; but for them society will no longer be responsible, and all true philosophers will accept such a social state as the truly normal, as it will be the only natural one.

CHAPTER XIV.

EDUCATION.[*]

DIRECT MEANS TO KNOWLEDGE; FIFTH AND LAST PROXIMATE END, AND INITIAL MEANS TO THE ULTIMATE END OF CONATION.

Education the highest application of the indirect method of conation—Attainment of ends through means; organization only possible through generalization—Elimination of self-executing processes—Inadequacy of the word "education"—Definitions of education—The five kinds of education, viz., of experience, of discipline, of culture, of research, and of information—Education of experience—Education of discipline—Education of culture—Education of research—Education of information—Education a social function—Comparative intelligence of the different branches of government—The railroad problem—Tendency of the state to enlarge its jurisdiction—Government peculiarly adapted for conducting scientific work—Still better for conducting educational work—Claims of state education—Absurdities of private education—Universal education—Need of educating the dangerous and dependent classes—Need of equalizing the amount of education—Compulsory education—Limits to be set to universal education—Education of women—The matter of education—Educational curriculums—Determination and utilization of special aptitudes—Means of education—Method of education—Conclusion.

WE have now arrived at the highest application which the human race is capable of making of the indirect method of conation—the loftiest flight of inventive art.

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[*] This chapter is simply an abridgment of a much more extended treatise on Education which was written in 1873, and then designed to form the closing portion of this work. Owing to the amount of space necessarily required in the elaboration of the argument itself, the impracticability of carrying out this plan has been apparent from the time that the outline of the work was recast in 1877. While it would be gratifying to embody these more amplified views on so vital a question, it will probably be conceded by the reader that this was not

As the ultimate end which every feeling organism, every individual man, and society collectively, both morally should and physically must directly or indirectly pursue, is the increase of happiness, so the highest achievement of the developed intellect and social consciousness of man is the substitution for the unsuccessful or partially successful and costly direct efforts to attain that end, of a systematic, predetermined, and successful scheme for the organization of happiness. Such a scheme must have for its primary object the equal distribution of the extant knowledge of the world.

The chief distinguishing characteristic of the intellectual, inventive, or indirect method is that of economizing the immense waste of force which necessarily attends the emotional, muscular, or direct method. By perceiving a train of physical sequences, the brain-force is able to direct the motor energy of the body to touch the springs, as it were, of phenomena, and thus cause existing external forces to do what would otherwise be the laborious work of the feeble organism. The secret of success in this effort is a correct acquaintance with the true means to be employed. The more remote the means from the end, provided it be the true means, the greater the disproportion between the cause and the effect, the less the effort and the greater the result.

At the same time it is true that the more remote the means the less apparent is its relation to the end, and the greater the acumen required to identify it as the true means.*

really necessary, and, considering the amount of condensation which it has been necessary to make throughout the entire work, so comprehensive a treatment of this one subject might have been regarded as a slight deviation from the normal proportions which it has been carefully sought to preserve between its parts. Adding to this the possibility which still remains of presenting this unpublished treatise on education to the public at some future time, perhaps still further amplified and perfected, the inability to do so at this time is not looked upon wholly in the light of a disappointment.

* The principal reason why education is suspected, and its efficacy doubted, is because it is a means so remote from the end sought, that human intelligence can only with the greatest difficulty penetrate the causal relations which unite them.

Hence the progress of civilization has been measured by the increase attained in the power of identifying remote means. The most remote means is not, however, the only one which can be employed. The proximate means are of all degrees of remoteness, but each is more successful in proportion as it is more removed from the end. The problem usually is to eliminate as great a number as possible of these intermediate terms. All effort expended on the first term is wasted if the second can be employed, and all expended on the fourth is lost if a practical grasp of the fifth is possible.

The deeper ground for this superior efficacy of the remoter means lies in the fact that such a series really represents an ever-widening circle of generalization. The more remote means stand for more comprehensive principles, and he who grasps the most remote means to a given end comprehends the widest law governing the given phenomenon.

Generalization is the condition of organization. Organization can only proceed in proportion as the phenomena to be organized are generalized. Hence organization is the certain measure of the advance made by the intellectual method. In fact, every application of that method is in the nature of organization. To seize the means, is true generalization; to apply them, is true organization.

The final object which Dynamic Sociology seeks is the organization of happiness. This it aims to accomplish in the legitimate way, by seizing and applying the most remote means to that end. The purpose of the last five chapters has been to generalize from the end itself up to the most remote means discoverable. In doing this it has been necessary to consider the principal proximate means, to each of which a chapter has been devoted. This ultimate means is at length found in what, for want of a better term, it will be necessary to call "education." This must be regarded as the initial term, and also as the true *point d'appui* of the system.

In all organization the object of chief concern is to learn which of the elements of the system may be safely left to take care of themselves. If the generalization is true, all the lower proximate means may be trusted to do this; the same as in a system of machinery, if only the driving-wheel is kept in motion and the whole gearing is properly adjusted, the entire system will certainly move. And just as any arrangements for diverting a part of the power from the driving-wheel and applying it to other portions of the machinery must result in nothing but the simple waste of the amount of power thus diverted, so in every true system devised in strict harmony with the laws of inventive art and with science, no matter how complex may be the class of laws with which it has to deal, even if they be the social forces, all power diverted from the motor, or initial means of propulsion, and applied to points of the system which are lower in the scale of generalization and organization, must represent so much wasted energy. This, of course, is on the assumption that a more remote means has been made use of, and is equally true whether this means be the absolutely most remote and general or only a proximate means; but, as already remarked, the less remote the means employed, the greater the power required to propel the system.

In the great system of Dynamic Sociology, involving the generalization of the most complex laws of being and the organization of social activities and individual feelings, there is found no occasion for modifying in the least particular these fundamental principles which hold so obviously in the field of physics and mechanics. We shall find that not only may the ultimate end, happiness, be left to take care of itself, but that all the intermediate proximate means to that end, progress, action, opinion, and knowledge, may also be so left. And we shall further find that both the increase of intellectual capacity and the origination of knowledge must be classed among the proximate ends which will, in the present state of society, follow of necessity from the application of the initial* means, which consists solely in the distribution of the already known.

Let us examine each of these steps from this point of view:

1. The direct pursuit of *happiness*, even by the individual, is proverbially barren of results. The voluntary determination to be happy rarely secures its aim. The more intently the mind fixes itself upon this end the more completely the end itself escapes.† Happiness, which only results from the full normal exercise of function, must necessarily be incidental to such exercise, which, physiologically viewed, is the end, though morally this incident becomes the supreme end. In seeking to attain it by a direct effort of the will, the moral end is confounded with the physiological end, and happiness pursued as a physiological end can not be attained, since it is not such an end. Therefore, even for the individual, happiness can only be secured by the adoption of such indirect means as will best maintain the constant exercise of the normal functions—means which bear no direct resemblance to the end sought and attained.

Considered from the social point of view, the powerlessness of direct efforts to confer happiness upon the members of society is still more apparent. Imagine a positive statutory enactment simply requiring all citizens to be happy! The utmost that society has ever sought has been to apply the second indirect means, and so to control action as to secure happiness. But even this it has rarely attempted in its positive form, and, when it has attempted it, it has generally failed. Its efforts have almost invariably been negative, and have usually possessed a double negativity. They have not only consisted in prohibitions to act, but the prohibitions have been designed to prevent actions which were regarded as calculated to diminish the amount of happiness. They have forbidden unhappiness rather than enjoined happiness. Government, which I have characterized as a practically non-progressive and simply conservative institution, has nevertheless so far employed the indirect method as to have made two generalizations. Still, its purchase for propelling the system has been so slight that, after attacking the problem in this doubly negative way, it has only so far secured the end as to neutralize the effect of antagonizing and disintegrating forces and to preserve the social organization.

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* No confusion can arise from the employment of the apparently opposite words "ultimate" and "initial" to the same term of the series, when it is remembered that this term must sometimes be contemplated as the *most remote* from the ultimate end, and sometimes as the starting-point of an active system. In the former case, it will be regarded as ultimate, or last; in the latter, as initial, or first. So with the intermediate, or proximate, terms, which are necessarily contemplated as ends when the mind passes from the ultimate end toward the initial means, and as means when it passes from the initial means toward the ultimate end. They are proximate means when regarded as means, and proximate ends when regarded as ends.

† Sidgwick's "Methods of Ethics," London, 1874, p. 41.

If, however, we grant that social progress is secured, no matter by what means, *i. e.*, that the materials and forces of nature are utilized by man, the end, happiness, comes as a matter of course, and without any direct effort whatever. This will take care of itself, provided the immediate means to its attainment be legitimately secured as ends in themselves.

2. But *progress* as thus defined, considered as an end, can no more be directly secured than can the ultimate end of which it is the immediate means. Social reform, however clearly perceived by the legislator, can not be brought about by direct legislation, either positive (affirmative) or negative. The evils to be reformed are caused by the natural flow of the social forces, which in these cases chance to be in conflict with the general interests of society. These forces can not be destroyed. If they are affected, it must be by guiding them into harmless channels, or subdividing them until each branch is too weak to be longer injurious, or in otherwise controlling or commuting them without diminishing their sum total. This can be done, and when the laws of their operation are fully comprehended it can be easily done, but it must be by the indirect, inventive method.

Great wisdom in legislation might check many retrogressive tendencies, if not create some progressive ones, without rising to the highest degree of generalization. It might accomplish this by making one or two removes, and employing the means which the laws of action and of thought afford. This would constitute attractive legislation, to which no society has as yet, except accidentally, attained. But by no possibility can social progress be directly achieved.

Yet, if men be induced, by whatever means, to perform the appropriate actions, progress will necessarily result without direct effort. If ethical and especially dynamic actions prevail, the materials and forces of nature will be utilized, the reforms needed will be effected, and progress will be already secured. This first proximate, like the ultimate end may then be safely left to take care of itself.

3. Regarding *action* next as an end, we shall see the uniform application of this law. Men may indeed be constrained to act and to desist from action, and, in so far as impulsive actions are concerned, such compulsory and prohibitive legislation may be regarded as an application of the indirect means supplied by the desires. As pointed out in Chapter XI (vol. ii, p. 318), such action is really voluntary and in obedience to the resultant of the two forces antagonizing each other within, the desire to commit the act and the desire not to be punished. But impulsive actions are never progressive, so that whatever success may attend this practice it has no effect upon the issue. Many deliberative actions may also be influenced in the same way, particularly ethical actions, and the distinction between the wrong and the prohibited has been well-nigh obliterated. But neither are ethical actions progressive, and the method of both the political and the moral codes may be regarded as statical in its results and practically a direct one.

But when we come to dynamic actions we find a marked distinction. These are wholly uninfluenced by any legislative fiat. They proceed from ideo-motor phenomena beyond the reach of such influences. No law, no physical coercion, from whichever code or from whatever source, can compel the mind to discover principles or invent machines. Neither can these prevent this except by withholding the means and opportunities for its accomplishment, which is only the mechanical and not the intellectual part. To influence such action other means must be employed. Ideas must be supplied or withheld.

4. All the higher forms of deliberative action rest upon intellectual operations which must be modified in order to affect them. The general conduct of mankind is determined by the *opinions* held, and without changing those opinions it is wholly impossible perceptibly to change such conduct. Yet let the sentiments, opinions, and ideas of society be changed, and the character of its actions will, without direct effort to that end, be correspondingly changed. Instill progressive principles, no matter how, into the mind, and progressive actions will result. With the former as a means, the latter, regarded as the end sought, may be trusted to follow as a natural sequence.

The attempt to change opinions by direct efforts has been frequently made. No one will now deny that coercion applied to this end has been a signal failure. Nothing more than a false admission of such change based on physical interest has ever been obtained. There is one way, however, in which force may and does secure, not a change of existing opinion, but the acceptance of certain approved beliefs; but this, so far from weakening the position here taken, affords a capital defense of it. The forcible suppression of the utterance or publication in any form of unwelcome opinions is equivalent to withholding from all undetermined minds the evidence upon which such views rest; and, since opinions are rigidly the products of the data previously furnished the mind, such opinions can not exist, because no data for them have ever been received (*supra*, p. 422). In such cases such opinions and no others will prevail as there exist data for, which are opinions whose data are not suppressed, but are freely promulgated. This law explains something more than the religious beliefs of the world. It explains the prevailing "public sentiment" of every nation and section of the world, and shows why it is so difficult to introduce the views of one country or section into another, however superior they may be in point of reasonableness. The application of this principle may be made here, though slightly anticipating its more natural place. It is simply that true views may as easily be created by this *method of exclusion* as false ones, which latter is the point of view from which the fact is usually regarded. The more or less arbitrary exclusion of error, *i. e.*, of false data, is to a great degree justifiable, especially where the true data supplied consist of verified experiences, and all the means of re-verifying them are left free. But the same end is practically attained by the intentional supply, on a large scale and systematically carried out, of such true data without effort to exclude the false. This, however, is the essence of what is here meant by education, which may be regarded as a systematic process for the manufacture of correct opinions. As such, it is of course highly inventive in its character, and the same must be said of all modes of producing desired beliefs by the method of exclusion.

While opinion, considered as an end, can not be directly destroyed, created, changed, or affected, still, if we assume the appropriate data for influencing it in any desired way to be supplied, we need no longer have a care for the result, which is secured without further effort in the application of the means.

5. The data of all opinions, or states of mind which form the basis for ethical or dynamic action, consist in *knowledge*, or apprehended truth. This acquisition of knowledge, or apprehension of truth, can only be sparingly secured by direct efforts. The senses are always receiving impressions, and, where these are true and so presented that the series of inferences following each and leading to a conception will be all correctly drawn, such conceptions will correspond with

objectivity, and knowledge will be the result. But such are the liabilities to error in running this gantlet that experience has shown the necessity of devising artificial means of the most careful kind, and of employing these in the most ingenious and systematic way, in order to eliminate these sources of error. Moreover, progressive views depend largely upon the quality of the data supplied. This must be of a high order of generality and practicality, as well as objectively true. Unguided experience never selects on the qualitative principle. The worthless and the valuable are promiscuously and unsystematically supplied, and few intellects can distinguish the chaff from the wheat, at least in youth, when the deepest impressions are made. An artificial system for assorting impressions, for causing their systematic presentation, for precluding the introduction of false ones, and the drawing of erroneous inferences, is therefore absolutely necessary to the successful creation of progressive states of the human mind.

Such a mechanism, however, adapted to its purpose, actually provides the data. Assume an adequate system of education to be in force, and the question of the quantity and quality of knowledge in society is no longer an open one. The application of the means is equivalent to the attainment of the end.

But it may be justly urged that progress depends upon intelligence, which, as shown in the previous chapter, is knowledge joined to intellect. The question may therefore be asked, What of this latter element, omitted from the foregoing considerations? While the present state of intellectual capacity may be sufficient for a time, the progress here contemplated will clearly require its increase. How shall this be accomplished? The answer is, that knowledge of the kind named constitutes a twofold means, or a means to the two ends: progressive ideas and increased capacity. More exactly stated, the act of acquiring knowledge under the biological law of direct equilibration will strengthen the intellect, while the knowledge after it has been obtained will expand the views. If it is complained that this must be an exceedingly slow process, it can only be answered that it is the only practicable method at the present time. Better than any artificial gymnastics, or efforts to cultivate the intellect by brilliant flights into the empty realms of pure reason, will the solid contact with things tend to carry nutrition to those cells of the brain-tissue which lie in such relations as to enlarge and develop the organ of thought. Intellectual exercise upon idealities tends to destroy the reasoning power of the mind by denying to it the terms of the relations which it seeks to grasp, and habituating it to conceive such relations to exist when some of their terms are wanting. The intellect becomes irrational, and as such incapable of appreciating the real knowledge possessed. But, accustomed to demand the presence of all the terms of the relations, it soon becomes incapable of deducing irrational conclusions, and refuses to reason until the data for a rational deduction are all supplied. It is in this quality, to a great degree, that the man of science is distinguished from the rest of his race. As a brain-builder, nothing is so eminently effective as constant and intimate dealings with broad and practical truth.

The permanent increase of brain-power is a strictly biological question. It means permanent alteration of tissue. This can only be accomplished in two ways: by direct equilibration, or the Lamarckian law of increase by use; and by indirect equilibration, or the Darwinian law of hereditary selection. The potency of the latter, even in a state of nature, is now thoroughly recognized by all biologists, and it has had its full share of influence in making man what he is. When artificially directed by human intelligence, this law ceases to be secular, and, from the quickness and certainty of its results, takes its place alongside of the methods by which man modifies the physical and material condition of the world. If, therefore, society could once fairly awaken to the overshadowing importance of taking this view of humanity in sufficient earnest to undertake the application of this method, the rapidity with which the intellectual and also the physical capacity of human beings might be advanced is astonishing to contemplate. But it has already been fully shown that this, if a living question at all, is one for the distant future, after the other influences shall have greatly increased the general average of intelligence. The other ? method, therefore, remains the only practicable one.

More accurately formulated, this method consists in an artificial modification of the environment. The truth apprehended acts objectively upon the brain, and effects transformations and permanent alterations of tissue, gradually but slowly building up a better structure. Heredity comes in, but not indirectly. The variations are transmitted, but not ? selectively. Much will be lost to the individual by dilution from union with inferior minds in reproduction, but nothing gained will be lost to the mass, or absolutely lost. And thus intellect will, upon the whole, increase.

But the chief fact to be noted is, that this increase of intellect need not, and indeed can not, be sought directly as an end. The same means which are sufficient to produce sound views of life are also the only practical means to the expansion of the rational faculty. The latter result, like the former, considered as a desirable end to be achieved, may be totally neglected in the scheme of social organization, in so far as the outlay of labor or expense in its direct attainment is concerned. To employ the means is to secure the end.

It may also be fairly urged that, while the amount of truth thus far made known may be sufficient for a time to satisfy the proposed state of social advancement, it must at length fall short, and new supplies must be produced; and the question may arise, What provision exists in the proposed system for the origination of knowledge? The answer to this question may be made to resemble as closely the form of that made to the previous one as the two questions resemble each other. Just as the acquisition of knowledge constitutes the only present practical means of developing the intellect, so the distribution of knowledge constitutes the amply sufficient means to its further origination.

The present marked tendency of the human mind to devote itself to the origination of knowledge ought to be a sufficient guarantee that it would do so under any circumstances. That so much is originated now, when so few possess high intelligence, makes it certain that far more will be originated when all shall possess high intelligence. In fact, there is now a vast amount of truth discovered from which society receives no benefit, far more than that from which it actually receives benefit. This consists in *rediscovery*. The unorganized condition of knowledge renders it possible for thousands of bright minds to devote life-long energies to the rediscovery of truth which may have been already not only discovered but applied to the arts before their researches were commenced. Contrary to the received opinion, the tendency of the mind is to original research and practical application. So great is this mental bias, that such research and application are being constantly undertaken without due preparation. The superficiality which should be complained of is that which narrows down to practical things before a sufficient foundation has been laid in theoretical preparation. Yet this is precisely the opposite kind of superficiality from that which is commonly deplored. While a thorough acquaintance with as large a number as possible of the most general laws and principles is really the most practical knowledge which it is possible to confer, this course is universally condemned, and one approved which aims to confer an exhaustive acquaintance with a very few special facts and methods. The result of this species of education is to strengthen the tendency to pursue narrow and unproductive specialties, thus increasing the real superficiality of society. It is this same false conception of the practical which causes society to regard the mere collectors of scientific facts as the true scientific men, while treating the organizers of those facts and those alone who put them to any use as theorists to be looked upon with suspicion.

One of the chief advantages, therefore, of the equal distribution of knowledge would be the great relative increase in its origination. For then, not only would thousands be induced to undertake original investigation who can now never entertain the idea, but most of the discoveries made would be first-hand discoveries and not mere rediscoveries. The impulse to prosecute original research would be strengthened and widely extended, while, at the same time, the relative productiveness of the efforts thus expended would be immensely increased. The origination of knowledge, therefore, however important, need not and does not form any part of the scheme of social organization, since it is clearly one of those things which can be safely left to take care of itself. Like the ultimate end, happiness, and like all the increasingly remote proximate ends—progress, action, opinion, knowledge, and intellectual capacity—upon each of which vast social energies have been vainly expended, the creation of intellectual data is a spontaneous process necessarily following upon the diffusion of the already known.

For the two most important and cardinal conceptions which this work seeks to convey, there exist in the English language no adequate terms. The ultimate end, not only of all action but of all effort to act, and the initial means to be employed in the systematic organization of society to realize that end as a product of thought and action, are both incapable of expression by any existing words. The embarrassments under which it was necessary to labor in the former of these cases were pointed out in the early part of Chapter IX (*supra*, p. 147). The difficulties of the latter case we will now briefly consider.

The inadequacy of the word *education*—the term which, after a careful consideration of them all, has been chosen, as upon the whole least objectionable, to convey the notion which it is here essential to convey—is manifest both from its etymology and from its popular meaning. From the former point of view, the word really has reference to some species of "drawing out" of the mind, which either means alteration of brain-tissue or it means nothing, a result whose perceptible production within the life-time of any individual is clearly impossible (*supra*, p. 482). From the popular point of view, the number of attributes which it possesses is very great and varied, constituting it one of those vague, undifferentiated terms which science abhors, and which have for their chief function to breed confusion of ideas.

As this word has, however, been frequently defined by high authorities, a few of these definitions may not prove amiss.

Let us first quote the editor of "The Popular Science Monthly," who is a well-known advocate of higher education: "Education is a *leading out* of the faculties, and the very word determines the method. It is not a forcing out, a driving out, or a grinding out by machinery, but a process that expressly excludes the compulsive or coercive element—a *leading out*, which implies that the individual material to be acted upon has a nature that must be respected and acted upon in a given way." *

It is but just, however, to the editor of "The Popular Science Monthly" to quote another of his utterances made five years later, in which it would appear that his mind had undergone considerable change, not to say made considerable progress, during its five years' earnest advocacy of the higher education. He says: "The crudeness and inefficiency of teaching are excused upon the plea that mental discipline is the thing aimed at in study. Our whole school system is imbued with this vicious fallacy, which is the great obstacle to rationalizing school methods. The knowledge that is of most worth is either not taught, or is taught so loosely and carelessly that it is of but little practical use; and the consequence is, that our boys are turned out into the world so ignorant and incompetent that they are defenseless in the exposures of every-day experience." *

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* Vol. vi (April, 1875), p. 749.

Dr. T. Clifford Allbutt, in an article in "Brain," † offers the following definition: "The true purpose of education is, first of all, to teach discipline — the discipline of the body and the higher discipline of the mind and heart; to encourage the budding faculties to break freely in natural variety; to quicken the eye and the hand, and to touch the lips with fire; to promote the gathering of the fountains of vigorous life by fresh air, simple nutritious diet, and physical exercise; and finally to watch for the growth, silent it may be for years, of the higher qualities of character, or even of genius, not forcing them into heated and froward activity, but rather restraining the temptation to early production, and waiting for the mellowness of time: remembering that the human mind is not an artificial structure, but a natural growth, irregular, nay, even inconsistent, as such growths are, wanting most often the symmetry and preciseness of artifice, but having the secret of permanence and adaptability." In all this it is clear that the thought of conferring knowledge never occurred to the writer as forming any part of education, while great possibilities seem to be entertained of producing some important modification of the organ of the mind.

A learned leader in the London "Times" of July 8, 1878 (p. 9), on the rejection of Sir John Lubbock's motion for the introduction of elementary science into the English schools, thus defines education: "Education, which might once have been defined as an endeavor to expand the intellect by the introduction of mechanically compressed facts, should now be defined as an endeavor favorably to influ-

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* *Loc. cit.*, vol. xvi (February, 1880), p. 560.

† Vol. i (April, 1878), p. 77.

ence a vital process." Here, again, is embodied, along with the idea that knowledge received by the mind can have no effect in developing the intellect, the further idea that such an effect may be easily produced without the mind receiving any knowledge.

Professor Alexander Bain, in "Education as a Science,"[*] cites a number of definitions of education. That of the founders of the Prussian national system is "the harmonious and equable evolution of the human powers," which Stein elaborates as follows: "By a method based on the nature of the mind, every power of the soul to be unfolded, every crude principle of life stirred up and nourished, all one-sided culture avoided, and the impulses on which the strength and worth of men rest, carefully attended to." In this, once more, while we hear about "culture," we hear nothing about *information*, and the chief defect of the German educational system is believed to be too exclusive attention to culture on the one hand and to specialism on the other.

Mr. James Mill's definition[†] was as follows: "To render the individual as much as possible an instrument of happiness, first to himself, and next to other beings." The soundness of this in the abstract is invincible, but, since it contains no hint at the method, it can not really be regarded as a definition of education at all, but rather as a mode of stating the utilitarian doctrine. The question is no longer as to the end but the means.

Herbert Spencer[‡] admits that "acquirement of every kind has two values—value as *knowledge* and value as *discipline*," and in numerous passages he very ably enforces the importance of the first of these values.*

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[*] P. 1. *Cf.* James Donaldson, "Lectures on the History of Education in Prussia and England," p. 38.

[†] "Encyclopedia Britannica," seventh edition, 1842. Article "Education," p. 433.

[‡] "Education," p. 37. This work is to be regarded rather as a treatise on home training and the bringing up of children than as one on education in any special sense, and as such it must be confessed that it handles the subject with more skill than has been done by many who have had more experience. Its chief postulate, however, is unsound, which is, that parents are generally quali-

It is evident that none of the above definitions are at all adapted to the present purpose. In the first place, all of them are far too comprehensive. It is freely admitted that the word *education* properly embraces these broad fields of influence. In the widest sense of the word, every thing that produces any permanent influence on the mind is education, and the sum total of the influences by which an individual has been surrounded from his youth up is popularly and conveniently called his education. In this sense education is often opposed to instruction. New truth presented to the mind is debarred from acceptance by the power of previous education. Yet no one would deny that such presentation of new truth is also education, so that the word, in addition to many dissimilar meanings, comes to have contradictory meanings. The employment of such a term, therefore, without a rigid special definition in other terms, would be impossible in a work making any pretensions to exact treatment, and its use in this chapter may therefore be regarded rather as a means of avoiding the repetition of that definition than as a sanction of the word.

Besides not being scientific in its meaning, it is a weak word in itself, and is too intimately bound up with a class of conceptions which imply mere ornament, culture, erudition, and are not serious enough to have a place in science or earnest philosophy. Education has been intrusted to young girls, feeble-bodied if not feeble-minded men who were considered incapable of any thing else, "book-worms" and *littérateurs* who are unable to live by their pens, until

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fied to instruct their children in what is most important for them to know. There never was a time when the children of twelve years could not instruct their parents in the most important branches, and this fact grows more noticeable as the methods of education improve.

* For other definitions of education, see Barnard's "Studies and Conduct," pp. 11-22.

a "pedagogue" has come to be regarded as about the same thing as a pedant. His duty is simply to polish off young people the same as a dancing-master is expected to do. The fact that the greater part of the time now devoted to education is spent on the ornamental part is a very obtrusive one, and has been much appealed to by the scientific school of educators. The truths instilled are of the derivative and attenuated class (*supra*, pp. 498, 527), and even these form only a small percentage of what is taught. The bulk of the instruction consists in the polite arts. It is teaching *how* and not teaching *what;* even those arts whose acquisition might be accompanied with information being almost exclusively confined to the former idea. Reference has already been made (*supra*, p. 501) to this fact as respects the rudimentary branches, and it may be here added that the same holds true throughout the received curriculum for higher branches. Not to speak of art itself—music, drawing, painting, etc.—the form in which *literature* is studied makes it virtually an art. The learning of foreign languages clearly illustrates this, and the idea of learning language as a body of principles rarely occurs to the teacher. Even poetry and *belles-lettres* in general are presented as arts to be imitated in small things, rather than as the best forms for the expression of great truths.

This merely ornamental education, this culture without information, Mr. Spencer very pleasantly likens to the flower which the florist aims to secure in the cultivation of the plant, and which to him is the end sought and the final product of his more serious labors. The fine arts, *belles-lettres*, and refined accomplishments of cultured peoples he calls, from the same analogy, the "efflorescence of civilization." * This is very fine, but is there not a flaw in the symbol somewhere? Is the flower of the gardener a suitable example? Is it a normal flower? Certainly not. It is abnormal. Its stamens and pistils have been converted into petals, a case of reversion, or retrograde development; it possesses none of the elements or powers of continuance; it is a teratological product of human design, a showy but ephemeral gewgaw. And such, it must be confessed, to a great extent is this "efflorescence of civilization," which consists in culture without knowledge. Impotent for all purposes beyond itself, and also for its own reproduction, it stands as a sort of showy monstrosity of artificial construction, a social excrescence harmless in itself, but requiring to be nourished with the richest juices of the social organism.

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* *Loc. cit.*, pp. 73, 74.

If education meant knowledge, we should have in lieu of this a culture representing the natural flower, less gaudy, perhaps, but more symmetrical, and, to the most refined tastes, far more beautiful, a real fertile culture with organs normal, and possessing all the germs and potencies of a future and higher life. Such an "efflorescence" would possess an earnest reality as well as a true beauty; it would exist for a purpose, and be worth the cost of its nurture and maintenance.

The Five Kinds of Education.

The prevailing ideas of education may be roughly classified under the five following heads:

1. Education of experience.
2. Education of discipline.
3. Education of culture.
4. Education of research.
5. Education of information.

EDUCATION OF EXPERIENCE.

Under the first of these heads naturally falls that education which every one necessarily acquires from his surroundings, whatever they may be. Some seem to think that this is enough, that contact with the world and observation of its ways are better guides than any form of artificial instruction. This view has already been adverted to (*supra*, pp. 175, 206), and need not here be more than correlated with other views on education. There is one practical phase of it, however, which has not heretofore been pointed out. This is the economic view. Life is made up of a series of trials to accomplish desired ends—to gain a livelihood, to amass wealth, to secure social position, to form advantageous associations, to select suitable life-consorts. All these objects must be sought by the light of the judgment, and upon the reliability of the judgment will depend the success of each. It must be confessed that thus far the "lamp of experience" is the only guide that mankind has had in all these matters, but has it proved a sufficient guide? Let the constantly recurring failures in every department of human activity answer.*

In the first place, it is not true that men always have or can have experience to guide them. Besides the obvious fact that the first effort must always be without experience, there is the fact that no two cases can ever be precisely alike. Experience *implies* failure, not failure every time, but failure one or more times, and the history of business proves that this implication is fully justified by fact. Success is rarely attained on the first effort, and many whole lives are a series of failures. It is by such successive failures, either from defective judgment or from dissimilarity of circumstances, that certain unfortunate ones are gradually crowded lower and lower down until they sink into pauperism or even crime. The various enterprises which are conducted are each the result of a series of efforts successively brought to naught by miscalculation, resumed under better auspices, and, by the light of previous failures, carried to a certain point where experience ceases longer to guide them, succumbing anew to adverse conditions, to be again resumed with still added wisdom, until they at last become firmly established, but only after ruining several individuals and wasting a number of fortunes. This is the usual lesson which is learned at the school of experience, and it is a legitimate question whether there may not be found some substitute for experience, something to take its place in cases where experience can not be had—something to assist experience, and in many cases render it unnecessary. For it must be remembered that experience costs. It is not a *desideratum* in itself. The end desired is success, and it matters not how this is attained. If there is any difference in point of economy between two modes of attaining success, no one will or ought to choose the more costly mode.

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* According to statistics annually compiled by Messrs. Dun, Barlow & Co., of New York, the proportion of failures to the number actually engaged in business in the United States was: in 1876, one in every 69; in 1877, one in every 73; in 1878, one in every 64; and in 1879, one in every 105. This, however, fails to reach the main question, which is, What proportion of the new trials prove failures? It is probably impossible to determine this, though doubtless a large proportion of the total failures are of new enterprises, those which have survived several years being far more likely to continue to survive. A further glance at the figures of Messrs. Dun, Barlow & Co.'s circulars may throw additional light on the problem. The number of persons in business in 1879 was 27,416 more than in 1878, and the number of failures during 1879 was 6,658; therefore, had there been no failures the increase during the year would have been 34,074. The total number of failures was therefore about 20 per cent of the new enterprises. This, however, was, as seen above, an exceptionally good year.

But success in life ultimately depends on knowledge. Failures are due to lack of knowledge, success to its possession. The most experience can do is to furnish knowledge, but it furnishes it only at enormous expense, the expense of many failures. Doubtless, knowledge, even thus gained, is worth its cost. The only question is, whether there is not a less expensive mode of acquiring it. It may also be true that there are kinds of knowledge which can only be obtained through experience. For such let us have experience. In fact, experience can not be escaped if men would. After all other methods have been used, this method will have to be added. It is customary to sneer at the notion that education can do any thing toward fitting men for the stern duties of real life, and naturally enough; for what has the pursuit of subsistence, the gaining of a livelihood, the conduct of a business, or the amassing of a fortune to do with "Greek and algebra," with Latin versification, with "a leading out of the faculties," with "the higher discipline of the mind and heart," with "culture," "erudition," or the "efflorescence of civilization"? Obviously nothing whatever, and, so long as these remain the objects of education, it can never be of the least assistance to experience. Yet the sole object of experience is knowledge. The question, therefore, becomes whether it is possible for a portion of the required knowledge to be conferred by education—by the education of information.

It may as well be pointed out that the fundamental distinction between experience and education is that between the genetic and the teleological method. Experience, like all other genetic processes, is accompanied by waste, by the absolute loss of all but a small differential of the progress gained (*supra*, p. 86). Education, like all teleological processes, is economical, seeks remote ends through tangible means, and achieves results wholly disproportionate to the efforts expended. If this mode of acquiring knowledge, therefore, can be shown to be applicable to the common pursuits of life, every consideration of human interest demands its adoption. The only problem remaining is the practical one of applying it.

The accomplishment of remote ends through means has been shown to consist in a generalization of the laws affecting the given result. If the practical affairs of life are not subject to laws which are capable of such generalization, then is the application of the teleological method impracticable; but, if they are governed by laws capable of generalization, this method is applicable. The education of knowledge can only proceed through the inculcation of more or less general principles underlying practical interests and affairs. This it is calculated to accomplish. That such principles exist and are widely recognized, few will deny. The expression "business principles" does not come from the theoretical economists but from the business world, and while its meaning is vaguely understood it is universally recognized as having a meaning. It is, in fact, experience that has taught the world business principles in so far as it has learned them, and taught them in its own ruinous way. But the question is certainly legitimate, whether they may not be taught in a far better and cheaper way.

All the activities of life are controlled by laws, all successful enterprises are prosecuted according to certain distinct and unvarying principles. These are empirically, though as a rule not scientifically, known. To co-ordinate them, though perhaps a laborious, is by no means a difficult task. To make them the subject of systematic instruction is not only possible and practicable, but in the highest degree desirable. In practice it would be found that such truths are bound up with all other truths, and that the most general knowledge attainable would have a direct and important bearing upon the most special vocations of life, so that, without descending to technical instruction, the greater part of all the most necessary and important practical knowledge of human life might find place in a universal curriculum.

EDUCATION OF DISCIPLINE.

As regards the education of *discipline*, it either means the modification of brain-tissue, or it means the supply of the mind with the data for thought. So far as the former is concerned, enough has already been said (*supra*, p. 482). The latter will be denied by its advocates, who imagine that there exists some intermediate process, vaguely apprehended, but potent in its effects. This mistake it is important to rectify.

There is no doubt a common plane somewhere on which psychology and physiology meet. Rigidly defined, psychology and physiology are one, and that one is physiology. But practically they are distinct. So doubtless every intellectual process is a physiological one, and every registered impression results from an alteration more or less permanent of the matter of the organ of thought. To attempt to draw this line between transient and permanent impressions would either ignore the phenomena of memory or place every impression remembered for the least duration of time in the permanent list as physiological. It is the fact that all mental action is the product of physiological action that renders real brain-development possible. Every impression received, every comparison made, every thought evolved, every truth grasped, is not only accompanied but caused by a corresponding modification of brain-tissue. But so subtile are these molecular changes that in the whole course of a life-time they may not make a perceptible difference in the quantity or quality of the brain. Moreover, there may be change without increase, modification of tissue without improvement of structure. There may also be deterioration, both quantitative and qualitative.

What, then, is mental discipline? How is character formed? Obviously by organizing mental states so as to elicit consistent and useful action. But action is the result of ideation, and this depends upon previous impressions converted into conceptions. And what is all this but the acquisition of knowledge? It can only be one other thing, and that is the acquisition of that which is not knowledge, *i. e.*, of error. Discipline either produces knowledge or it produces error. Character is either true or false. If it be a fact that there is a discipline which results in neither knowledge nor error, then it must be an empty bubble, and this claim is supported by the inanity of many "disciplined" minds.

Granting, then, the importance and desirability of discipline, how can it best be secured? Clearly by the organized reception of the most important knowledge. Character, therefore, and morals fall naturally into the already extended catalogue of self-adjusting ends. The education of knowledge implies discipline, produces character, involves morality. These ends may, therefore, be safely neglected. They can not fail to follow from the adoption of the means.

EDUCATION OF CULTURE.

The education of *culture* aims to supply the mind with something, with some knowledge even, but it is a kind of knowledge which has no practical value. This knowledge is of two kinds: knowledge of ways and knowledge of things, but the former belongs to the artistic and the latter to the derivative class. Artistic knowledge is called accomplishment; it is to know how to be graceful, to do pleasing things. It is very desirable but not necessary. The derivative knowledge of culture is also merely ornamental. Much of it is so, however, simply because it is fashionable. It would be utterly worthless in itself. It only confers pleasure because it is a pleasure to conform to conventional standards. Much of it, on the other hand, is capable intrinsically of affording pleasure. It is therefore not to be condemned but approved, after knowledge of the essential kind shall have been obtained. The objection lies solely against making such knowledge primary instead of secondary, or, as is often the case, making it the only knowledge.

EDUCATION OF RESEARCH.

The education of *research*, or origination, assumes that the great aim should be to discover truth. Reasoning from the fact that all human progress has been the result of the discovery of truth, its advocates conclude that this is the thing to be sought at all times and under all circumstances. They maintain that truth discovered will naturally diffuse itself, the precise reverse of this being the case, viz., that knowledge diffused will naturally reveal new truth. It is not true, either, that truth tends, to any great extent, to diffuse itself. Vague inklings and distorted rumors of it spread far and wide, but these, so far from realizing it to society, do much to neutralize its real effect. Great discoveries and inventions are, it is true, usually put to practical use; and society, in a manner, but in an imperfect manner, receives the benefit of many of them. But society is incapable of appreciating them. Its universal ingratitude to the discoverers proves this, and the way in which it allows itself to be imposed upon by charlatans still further proves it. The public at large rarely realize that there has been any discoverer. They eagerly avail themselves of new and improved appliances for attaining desired ends, and immediately commence to complain because they are not more perfect. In some vague way they ascribe them either to Providence or to government. This is because the knowledge which renders discoveries and inventions possible is not distributed.

An illustration of this is well seen in the manner in which the recent meteorological predictions are regarded by the public. The technical terms in which it is necessary that they be couched are not understood, and are jumbled in the mind, which causes them to be declared unintelligible, ambiguous, and conflicting. We constantly hear some one say, after reading them, that one may make any kind of weather out of them, when in fact the language may be clear and the prediction definite. Ignoring the majority of cases in which they prove true, a single partial or even apparent failure brings down execrations on the Weather Bureau. Some even have a vague idea that the Weather Bureau should *control* the weather. The majority fail to distinguish its predictions from those of the many local weather prophets and of the almanacs, and do not understand why it might not as well predict for a whole season as for twenty-four hours. Only an occasional one fully appreciates the truly grand result already attained, by which we are furnished daily with a map on which is recorded the actual state of the weather at a given moment over the greater part of this continent. Truly this is "casting pearls before swine." And so it is with all the great discoveries and achievements of science. The world can not appreciate them because the manner in which they are obtained is not generally known. And, while it manages to put some of them into practice, there can be no doubt that only a small part of the discovered truth is really utilized, and it can not be all utilized until scientific knowledge is made more general. A discoverer never sees all the possible applications of the truth he brings forth. An unscientific public is incompetent to utilize truth to its fullest extent, the originators of truth are never adequately respected or rewarded, and speculators often succeed in depriving both the inventor and society of the benefit of a great principle.

Again, the education of research still further tends to increase this incongruity by encouraging extreme and impracticable refinements of specialism. While there is great rivalry in the making of new and original researches, there is little rivalry in arriving at practical results. The chief object becomes to do something that no one else has ever done,* and the question of utility is apt to be ignored entirely. The result is the detailed elaboration of every conceivable subject, and the pursuit of minutiæ to the last degree of exhaustiveness. This is very clearly illustrated in Germany, where the *Lehrfreiheit* and *Lernfreiheit* are so loudly extolled. There is scarcely a thinkable question which some German student has not investigated in this exhaustive way. This knowledge may one day, if preserved, prove useful, but to-day the great bulk of it is incapable of being assimilated by any nation on the globe. And yet it is supposed that the evils of society are to be cured by further research, by the origination of more unassimilable knowledge.

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* The power of this sentiment, as well as its prevalence, may be seen in many subordinate ways. One of these, which has often struck me as very remarkable, is the frequency with which we find persons delighting in the performance of acts for which they have been by accident or otherwise disabled. Two cases have come under my notice in which cripples have acquired an irrepressible passion for gunning. One had lost his leg by amputation of the femur. He wore a wooden leg, and with this he ranged the fields and woods with his dog and gun. The other had lost his left arm at the shoulder, and was fond of showing how skillfully he could bring his piece to his shoulder with one arm, and to increase the effect always carried a rather heavy one.

This principle may also in great part account for blind Huber's passion for *observing* bees. It doubtless also extends to those cases so frequently remarked in which men of real talents in some special direction fail to appreciate this, and manifest special fondness for other pursuits and labors for which they are wholly incompetent. These persons doubtless despise work in the direction of their natural proclivities because it is to them easy, and they fail to realize that what is easy to them is hard to others; and, conversely, they probably unconsciously reason that those pursuits which are difficult for them must be intrinsically difficult, and therefore they wish to show their skill in attacking them.

EDUCATION OF INFORMATION.

The education of *information* differs from all the forms of education considered. It differs from the education of experience in proceeding artificially and teleologically to confer knowledge. It differs from the education of discipline in paying no special regard to the formation of intellectual faculties or of character, assuming that these must necessarily follow from the possession of knowledge. It differs from the education of culture in making the ornamental secondary and the useful primary; in conferring, first of all, a knowledge of the most general and the most practical truths of nature and of life, and afterward in teaching truths and principles rather than methods, the *what* and the *why* rather than the *how*. It differs from the education of research in leaving the latter to take care of itself, and confining itself exclusively to imparting discovered knowledge to those who do not possess it.

Education, as understood in this chapter, may therefore be defined as a system for extending to all the members of society such of the extant knowledge of the world as may be deemed most important.

The first cardinal principle upon which this system rests, and by which it is distinguished from other systems, is its exclusive devotion to the *contents* of the mind and its entire disregard of its *capacity*. Its object is to store the mind with a carefully organized assortment of the most useful and important known truths, and to trust to this process of exercising the mind upon earnest realities for whatever increment of brain-development may naturally result.

Some may call this a system of "cramming," but this charge can not be made until it is known that more knowledge is attempted to be imparted than can be received without injury. Neither will it do to assume that the method of imparting such instruction must necessarily be harsh or severe. Both these elements are wholly undetermined, and perhaps can only be determined tentatively. These are matters of detail into which space forbids us here to enter further than to say that they are both of great importance, and must be determined with an enlightened regard for all the conditions of the problem. But, if any go so far as to claim that the inculcation of knowledge must necessarily be harsh and severe, then, for such, no method of education could be made free from this fault.

Relative to the much-discussed question of "cramming," however, it may be remarked that the kernel of the matter seems generally to have been ignored. It should be emphatically denied that any great proportion of the evils of over-brain-work can be attributed to the acquisition of knowledge. The small amount of knowledge acquired or sought to be imparted ought sufficiently to attest this, but it is further proved by the ease and eagerness with which really knowledge-giving studies are pursued. The truth is, that no part of education is so easy and is gone through with so little strain to the system as that which affords the chief elements of truth acquired during the course. The normal mind is hungry for truth, and, when fed with it, it devours it with a relish and digests it without effort. That which wears out the young mind is the perpetual straining after an ideal intellectual development, the taxing of the wits in the solution of valueless puzzles, the memorizing of long lists of meaningless names to "lead out" the faculties, and all the other "tricks" of the teacher's trade which it is supposed necessary to learn in order to "get an education." The psychological principle upon which all so-called over-brain-work rests is the essential difficultness of all unnatural mental action. The studies that wear out the brain are those that are forced upon it against its natural promptings.

All action proceeds from desires which are the true forces that impel it. Brain-action is no exception. Its amount is measured by this force. But here, as every-where else, there are conflicting desires. The spontaneous intellectual impulses may either coincide with or run counter to the deliberative desires arising out of interest or supposed duty. In either case the result of all the mental activity which takes place will be represented by the algebraic sum of these two forces. If the spontaneous impulses are in the same direction as the dictates of interest and duty, the product will be large and the effort small. If these are opposed, the product will only represent the mathematical *resultant* of these two forces; and it will require a large expenditure of effort to bring out a small result. It is rowing up the stream, or sailing against the current (*supra*, p. 345).

Now, in all but the most exceptional cases the apprehension of general and practical truth satisfies a spontaneous craving. Where this seems to fail, it can generally be traced to clumsy methods of presentation. No other class of knowledge is so welcome, no other so readily grasped and eagerly appropriated. Hence the normal intellect is capable of receiving a far greater amount of this most useful of all knowledge than of any other kind with the expenditure of the same effort. The assertion that scientific truth in general is difficult of comprehension is only made by those who are unacquainted with it. On the contrary, it is its very simplicity which often stands in the way of its acceptance.*

The adult mind, with its inherited load of dialecticism, prefers something obscure, intricate, and mystical. This, science is not, but deals constantly with the real, tangible, and demonstrable. It is otherwise with the young mind. By a Darwinian law, this love of the ideal only appears at about the age at which it was acquired by our ancestors. The child loves truth, craves it, comprehends it easily, and never wearies of it. It is by refusing it, and compelling the reception of unnatural ideas by more unnatural methods, that the youthful brain is overtasked. In acquiring a little of such so-called knowledge, it has really performed an Herculean labor, it has stemmed the whole current of its nature.

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* Haeckel, "Anthropologie," S. 108, 109.

The object *is* to fill the mind with truth: not to *cram* it, nor to force it, but to store it in such a systematic way with knowledge that it may make use of its stores in the production of rational thought. The idea that the mind breaks down because crammed beyond its capacity with knowledge is a gross misconception of the primary principles of psychology. It is based on some such crude assumption as that the brain is a hollow sphere and that thoughts are material gases introduced into it. The fact is that the lowest town gossip has a larger number of items of information stored away in his brain than Humboldt ever had. It requires no greater effort to know something important than something unimportant. It is not the quantity of knowledge but the quality, not the number of truths but their value, which should be chiefly considered, and the ability of the mind to acquire them forms no part of the problem.

Education a Social Function.

The second cardinal principle of the educational system here proposed is, that it shall be the exclusive work of society itself. By this is meant that, through whatever form of organization society prefers to act, the educational system shall be devised and carried out by that organization. Of course, in the present state of society, this organization goes by the name of government, and there exist in the civilized parts of the world a large number of distinct and independent autonomies of this kind. Prior, therefore, to the ultimate amalgamation of all these governments, should this ever take place, whatever is predicated of society in general may, without affecting the conditions of the discussion, be applied to any one of these social autonomies, within which an educational system may as easily be established as in a union of all these societies. In common parlance, then, education must be exclusively intrusted to the state, and can never be adopted until the state is ready to adopt it.

The extension of the province, or functions, of government is objectionable to many persons. This, as pointed out in Chapter X (*supra*, pp. 227, 242), arises from the character of the prevailing views which are entertained respecting the nature and sphere of government. It is so customary to look upon government as a sort of extraneous power, to be kept constantly in check, as though existing by and for itself, and independent of the people (a view which goes far to make itself realized in fact), that the mention of adding any thing to the powers already vested in it is at once met by a strong resistance from a considerable class of citizens. Whatever may be the real grounds of this opposition, and it should be admitted that in all existing governments there are such, they must be inadequate to defeat the establishment of a system of education, and no system of education not exclusively intrusted to the highest social authority is worthy of the name. The initial step to all social progress can, of course, only be taken by society itself.

But it may be said that society, as represented by government, is incapable of devising and conducting a system of education. It is admitted that the corporate intelligence is far below the highest private intelligence, and perhaps below the average individual intelligence. Legislative bodies, as we have seen (*supra*, p. 395), are considerably below the average intelligence of the members of such bodies, and those members but little more than represent the average intelligence of their constituencies. How, then, can such bodies be expected to be capable of originating a true system of education? The only reply is that there is no alternative, and the system must simply wait until the state sees fit to adopt it.

But, respecting the action of government, there are some important qualifications to the above charges which are usually disregarded. In the first place, it is not just to judge government as a whole by its legislative branch alone. Government always *administers* more wisely than it *legislates*. The judicial branch, too, is far more enlightened than the legislative branch, rather more so than the executive. Besides the enactment of laws there is the interpretation of them, and this is usually in the direction of reasonableness and justice. The ministers are also constantly required to act upon matters *ultra vires*. Laws can not descend to all the minutiæ of the business interests of a great state. In this way, and by the exercise of discretionary powers, the administration is constantly introducing new systems and methods to meet pressing demands of changing conditions. It thus becomes to a great extent the originator of governmental functions, and in so far assumes legislative powers. It always does this wisely because it does it deliberately. The aggregate wisdom of legislative bodies is below the average wisdom of their members, for the sole reason that their aggregate actions are not deliberative actions, the name "deliberative bodies" to the contrary notwithstanding. Executive and judicial bodies are wiser than legislative bodies, because they are more deliberative. The higher courts of a state are the most truly deliberative bodies of the state. But for the narrow, special, and superficial education which officers of the law receive, these courts would embody the highest wisdom of society. As it is, their judgment is always more reliable than that of any other officers of the government, not so much because their members are better jurists, but because they are so constituted as to render their action on all questions deliberative. It is by ample deliberation, free from distracting influences, that they at length arrive at decisions which are both just and reasonable. Deliberative action is rational action. To deliberate is to reason. "Nothing," said Lord Coke, "that is contrary to reason is consonant to law." There is really no difference between deliberation and what is called the "judicial" method. All legislation *should* proceed upon this method. The fact that it does not is one of the chief causes which render courts necessary. But the powers of courts are greatly restricted. They can originate nothing. It is from the administrative, or executive, branch that has thus far come what little progressive action governments have ever taken. For it must be remembered that the differentiation of the several branches of government is a comparatively recent event, and it is still far from complete. Formerly the three "co-ordinate powers" were more or less completely combined. Whereas now the legislative branch is the avowed originator and supreme ruling power of the state in most civilized countries, it was formerly the administrative branch that assumed this character.

With what difficulty, conservatism, and adroitness this change has been effected is shown by the surviving forms still retained in the preambles to statutory enactments. Of all the great nations of the globe, the United States stands alone in having discarded these forms and placed the legislative power avowedly, as it is virtually, at the head of the law-making process: "Be it enacted by the Senate and House of Representatives in Congress assembled," etc. The high legislative prerogative of the President to prevent all legislation not sanctioned by two thirds of both Chambers is not even recognized in this preamble, except perhaps impliedly in making him a part of Congress.

Very different from this is the formula of the present Republic of France: "Le Président de la République française, sur la proposition du Conseil, Ministre, etc. Décrête," etc.

In this we see the obvious survival of the previous formula of the Empire: "Napoléon, par la grâce de Dieu et la volonté nationale, Empereur des Français, à tous présents et à venir, salut. Sur le rapport de notre ministre, etc. Avons décrété et décrétons ce qui suit:"

In Great Britain, which, though nominally a monarchy, is really a republic, the formula is as follows: "Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:"

In the German Empire every law is preceded by the following preamble: "Wir Wilhelm, von Gottes Gnaden Deutscher Kaiser, Koenig von Preussen, u. s. w., verordnen im Namen des Deutschen Reichs, nach erfolgter Zustimmung des Bundesraths und des Reichstags, was folgt:"

The Austrian preamble is as follows: "Mit Zustimmung beider Häuser meines Reichsraths finde Ich anzuordnen, wie folgt"—the act bearing the signature of the emperor.

These surviving formulas of legislation clearly show to how great an extent the executive branch of all European governments, nominally at least, exercises legislative powers. Although much of this is mere form, designed to show respect to the executive heads, and to make them feel less keenly the extent to which they have been shorn of their former power, while the laws themselves are really originated in the legislature and only presented to the executive for approval after having been passed by that body, still, not only in these nominal monarchies, but in the not less nominal republics of the world, the executive branch actually performs a large share of the legislative work, including the origination of the most important measures of the state. It alone knows what the real demands of the state are. It is constantly subjected to pressure from various quarters arising out of the normal operations of trade, manufactures, and industry in general. These pulsations it can not help instantly feeling, and it is ever stepping to the verge of its statutory authority to meet these demands; and, finding itself constantly impeded in this work by obstructive or deficient legislation, it is perpetually availing itself of its prerogative to recommend the needed measures of relief to the legislature. The legislature, in return, conscious of its inability to comprehend these needs, is usually ready to respond to these suggestions by passing the required acts, which are often drafted for it by the administrative branch. It is in one or the other of these two ways—either by the arbitrary adoption of measures which contravene no law, or by the successful suggestion of legal reforms to the legislature—that the really most important and best-matured work which states have ever accomplished has been done. This is because it is done deliberately, and with a due regard for the evidence of its necessity and advantage. Measures of this nature certainly embody a degree of wisdom, even in the present state of society, considerably above that of the average individual even of the better-informed classes.

If any proofs of this were needed, they are to be found in the history of what is known as the "railroad problem." That unrestricted private enterprise can not be trusted to conduct the railroad system of a rapidly growing country, may now be safely said to be demonstrated. The principle of unlimited competition upon which private management rests tends so to complicate the railroad interests as to ruin many of those who embark in the enterprise, and, what is worse, to sink and destroy immense investments of capital expended in their construction and equipment. Lines are built where they are not needed, rates are lowered below the power to cover expenses, the sense of losing makes the officers and directors indifferent to the proper service of the public, negligence causes disasters to passengers, and at last a crisis is precipitated and all the lines are either suspended or absorbed by some one, or thrown into litigation. Railroad wars are followed by railroad monopolies, and it is difficult to tell through which the public suffers most. The highest wisdom has never gone further than to adopt a system of arbitrary apportionment of profits among several rival lines, vulgarly called "pooling," which is a scheme unknown to the law, is usually entered into on purely verbal agreements which are broken the moment any one of the parties finds it to his interest to do so, and which operates upon the public in a manner even worse than does a legitimate monopoly through legal amalgamation of lines.

A not unfrequent solution of such difficulties is found, or at least sought, through a humble appeal to the state for succor. To such an extent was this the case in France that the government at last resolved to absorb all the lines in the country. It commenced this policy in 1877, when ten competing lines failed and sued for aid. It purchased these and made them the basis for a general acquisition of the railroad property of France. It entered upon the administrative management of its own lines at once, and so successful has the policy proved that it has now undertaken the construction of about fifteen thousand kilometres of additional state railroads. It lays them out where and only where they are needed. It also prohibits private enterprise from the construction of competitive lines, wisely perceiving that, contrary to current *laissez faire* principles, the interests of individuals engaged in serving the public do not always coincide with the interests of the public.

Though France is perhaps the best illustration of this general truth, it is by no means the only one. Belgium has already well-nigh passed through its ordeal, and is now in possession of the greater part of the railroads of the kingdom, in managing which it so competes with the remaining private lines that these are now joining with the general public in asking it to add them to its posesssions. Germany is rapidly moving in the same general direction under the influence of the same motives, while Italy is imitating the example of France in almost every particular. In England, though the government has not yet assumed the proprietorship of any railways, it has been compelled to place them all under the closest surveillance, even going so far as to establish a special court for the adjudication of railway grievances. It prevents competition by encouraging "amalgamation," and thus is able to postpone the crisis which also has long threatened to come in that country. The United States is still in the midst of utter chaos in this respect, from which its *laissez faire* policy renders it incapable of extricating itself. Therefore, the wasteful policy of competition is allowed to go on, destroying the earnings of the people.

While the railroad problem is just now the most prominent before the world, and best exemplifies both the incapacity of private individuals to undertake vast enterprises like this, and the superior aggregate wisdom of the state in such matters, it is by no means the only one that could be held up in a similar manner and made to confirm the same truth.

Competition is to industry what "free trade" is to commerce. They both represent the wasteful genetic method, destroying a large proportion of what is produced, and progressing only by rhythmic waves whose ebb is but just less extensive than their flow.

As remarked in the Introduction (vol. i, p. 61), the question whether any enterprise should be undertaken by the state or left to individuals is one which must be determined on the intrinsic merits of each individual case. The transfer of functions from the latter to the former simply marks the expansion of the jurisdiction of the state, a process which, when correctly viewed, has been going on steadily from the earliest ages of political history. Nearly every present acknowledged function of government has once been intrusted to private enterprise. It simply shows that, little by little, society has risen to the consciousness of its needs, and has, one by one, assumed control of the more important public interests. Whether it be its finances, its criminal jurisprudence, its customs regulation, its postal affairs, its telegraphs, or its railroads, whatever it fairly perceives to need state administration, it proceeds to assume and add to the functions of the government.*

Now, of all the enterprises which the state has thus appropriated to itself, there is not one which it has not managed better and more wisely than it had been managed before by private parties. Most of them are such that the world has entirely forgotten that they were ever private enterprises. Others have become cherished public institutions which no future revolutions can again remand to private direction. And there are others which are still debating-ground or on trial in some states. The transportation question is one of these latter. Telegraphic communication is another. Education is a third. Other social operations still, not now looked upon except by a few as belonging to this class, are destined to pass through the stages of agitation and governmental assumption. These facts should not, however, lead to the conclusion that government should immediately assume charge of all private enterprises which concern the general public. There must be a gradual maturing of the conditions, both on the side of the state and of the individual, before this can successfully be done. The question in each case must always be, Is the age ripe for this change? As society is constituted, however, premature action of this nature can scarcely occur. So strong is the force of established custom, that it much more frequently happens that the event is too long postponed, and the state does not step in until the crying evils of private mismanagement and individual incompetency have thoroughly aroused it to the necessity.

The superiority of governmental administration over private management, in large enterprises of a general public character, has been clearly seen and frequently pointed out, but the progress of popular opinion on such questions has been powerfully counteracted by the special nature of the case. Private enterprise is ever jealous of governmental encroachment upon its domain, and the more lucrative the enterprise is—that is, the greater the need that it be conducted by society in the interest of its members—the stronger will be the influence brought to bear against such a result. This influence is exerted by the creation of a public sentiment against state interference. In this, private enterprise always has matters almost entirely its own way. The state has little interest in the subject. The people at large rarely attribute their burdens to the proper source. Things must reach the point of unendurableness before the public will appeal to the state for assistance. Meanwhile a constant stream of opposition to all forms of state interference, more or less ingeniously supported by plausible argument, is being poured out by interested parties. The result is, according to the principle already laid down, that current views which are unopposed will be generally accepted (*supra*, pp. 422, 433), that the state must overcome an immense mass of prejudice before it can act in any case.

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* In a paper on "Politico-Social Functions," read before the Anthropological Society of Washington, March 15, 1881, and published in the "Penn Monthly" for May of that year (p. 321), these views were set forth and substantiated more fully than can be done here.

To illustrate this, let us again recur to the railroad question. The policy of the railroad organs is to insist at every opportunity on the incompetency of government to operate railroads. Prior to all attempts of this nature, this was maintained as a simple matter of *a priori* deduction. But since the trials in Europe, and their more or less complete success, a new method of opposition has been introduced. Besides the sweeping charges of official corruption among so large a number of government employés and other "stock arguments," they have appealed to statistics, and found that almost without exception the cost of operating a railroad by the state is greater than that of operating it by a private company. They also find that notwithstanding this the net earnings of state roads are less than those of private roads, proving, as they claim, that they are not running on as sound a financial basis. These facts are re-echoed in every possible form, and made to demonstrate the vast superiority of private over public management. The sophistry of this mode of argument is not generally penetrated by the public mind, and for the most part it has the effect intended. A further scrutiny of the statistics, however, almost invariably reveals the fact that, wherever comparison under similar conditions is possible, *rates*, both passenger and freight, are lower on government than on private lines,[*] which, from the stand-point of the public, is the kernel of the whole matter. The peo-

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[*] Owing to the characteristic shrewdness of capital, there are few countries in which statistics of rates can be satisfactorily obtained. In those countries where all roads are in the hands of companies, and competition is unchecked, they are too unsteady to render them of any value. In Prussia, where the railroads are partly owned and worked by the state and partly by companies, while still another portion are owned by companies but worked by the state, careful statistics are annually made up which shed much light upon this vital question. The following table is compiled from the official statistics of the railroads of Prussia for the year 1874:

OWNERSHIP AND MANAGEMENT.	Proportion per cent of expenses to receipts. Test of lucrativeness.	Average cost to one passenger to travel one kilometre. Test of public advantage.	Average cost of transporting one centner of freight one kilometre. Test of public advantage.
		Pfennige.	Pfennige.
Owned and worked by the state...	75·50	4·04	0·27
Owned by companies, but worked by the state..................	68·90	4·08	0·25
Total worked by the state.......	72·83	4·06	0·26
Owned and worked by companies.	66·40	4·42	0·31

It will be sufficient to point out that, while the roads owned and worked by companies yielded 13·7 per cent greater profits than those owned and worked by the state, the latter carried passengers 9·4 and freight 15 per cent cheaper than the former. It should be added that in no case were any of the government lines run at a loss, but on the contrary fair profits were returned to the state in each case. Since compiling this table, the latest then attainable, I have casually examined later statistics, and find them to yield substantially the same results. As the labor of compilation is considerable, I leave the figures for 1874 as a fair example. (*Cf.* "Statistische Nachrichten von den preussischen Eisenbahnen.")

ple should look with suspicion upon excessively lucrative industries, since their very sound financial condition proves that they are conducted too much in the interests of the directors and stockholders and too little in that of the public. The failure of the state to make them lucrative should also be construed as an evidence of the integrity and proper sense of duty of the officers of the state.

Without further attempt to show the difficulties in the way of the assumption by the state of many of the functions properly belonging to it, it must suffice to point out the fact that whatever the state does is usually better, if not more economically, done than what is done by individuals. Statistics show that in the management of the finances the losses sustained in government transactions bear a less proportion to the sums handled than in private institutions. This is due to numerous causes, one of the chief of which is the absence of personal attachment and sympathy. In a national exchequer the teller or cashier expects to have his balances scrutinized, and feels no humiliation in submitting to it. It is done by law, or by general regulation, as a regular part of the duties of the office. This is usually not the case in private institutions. Ties of friendship, often of relationship, require these precautions to be neglected through fear of seeming to suspect dishonesty, and thus, human nature being every-where the same, fraud and embezzlement are of daily occurrence.

It might similarly be shown that all the functions of government are usually performed with far greater thoroughness and fidelity than similar functions intrusted to private individuals. If any one will take the trouble to examine the various reports published by the several executive departments of any government, and to compare them with efforts of a like general nature made by individuals, he will doubtless be willing to confess that the latter fall below the former in many important respects. The peculiar weight which every body attaches to the word "official" has something more to sustain it than that mere blind worship of great names. It is instinctively felt that, whether absolutely reliable or not, an official statement is the very most reliable to be attained; and between two statements, one official and the other unofficial, the strongest opponent of governmental encroachment on private territory would not hesitate to prefer the former. It is fashionable to declaim against the so-called "bureaucracy" of modern times, but this is only a part of the attempt of sagacious capitalists to manufacture public sentiment to counteract the steady current of rational conviction toward the conclusion that society must arouse to its own interests, and take the welfare of its members more directly into its own hands.

There is one class of work extensively performed by the state which has proved its adaptability to this method more completely perhaps than almost any other. This is work of a scientific character. Whatever scientific undertakings have been intrusted to the government have almost invariably been ably and thoroughly prosecuted. This is abundantly illustrated by the exceptional efficiency of our Coast Survey and Light-House Service, by the labors of the Naval Observatory, of the Signal Service, of the Patent-Office, of the Geological Surveys, and of every other bureau to which work of this class has been intrusted. The same is true of all other countries. The scientific mind appears to be peculiarly adapted to faithful service in situations where great practical interests are involved. Scientific men are, from their very education, earnest men, and fully aroused to the importance of putting their knowledge to the best practical use. Though making no professions of philanthropic principles, they really have the welfare of society more at heart than many who talk loudly of social reform. They only ask an opportunity to apply scientific principles to great things, and when this is offered they, as a rule, devote themselves completely and unreservedly to their work.

Then, again, science is ill-adapted to the competitive and feverish methods and sentiments that obtain in nearly all departments of private life. Success in science depends on the ability to await results. Science can not be hurried. Forced to make haste, it is in danger of degenerating into charlatanism. It must also be independent. No one can influence it or warp its conclusions. There is no substitute for exact truth. For all these special characteristics of all scientific work, the service of the state is admirably adapted.

All that has been said of scientific work and much more will apply to educational work. Education is essentially a scientific labor, and this in the highest sense. It is not only the science of sciences, but the art of arts.

Without repeating the considerations set forth in the preceding paragraphs, we may proceed to enumerate a few of the special reasons why all educational work should be intrusted to the state.

Education can not be successfully conducted on the competitive system. It is an enterprise so wholly dissimilar from those of ordinary business life that an entirely different set of principles must be applied to it throughout. In the first place, it is not prosecuted in order to supply any of the demands of the physical being. No true social force can be named as its original motive. It is from first to last the result of cold calculation based on observation and experience. There exists no natural desire for education. Even admitting the natural craving of the youthful mind for knowledge, this would never be sought in any of the ways in which education requires it to be conferred.

Again, the recipients of education are not the same individuals as those who really desire that education be given. Where this desire is more specialized than in society itself, it inheres in parents or guardians, viz., the desire that their children or wards receive it. This is obviously a wholly anomalous form of enterprise, and finds no analogue within the whole domain of social undertakings. This radical difference of nature, therefore, clearly requires a radically different form of treatment, and the principles and formulas that apply to other enterprises are wholly inapplicable to this one. Adam Smith excepted education from the law of supply and demand, and similarly it must be excepted from every other established law of politico-economics.

Every thing that is done by intelligent beings must of course have a motive, and, since all motives are merely desires, every act must proceed from some desire. Thus far, but no further, education conforms to all other human undertakings. The fundamental characteristic which distinguishes it from all others is that here the individuals who receive the direct benefit are not the same as those who desire the end. To those who desire the end the benefit is indirect. Those directly benefited usually have no desire but rather an aversion for the end.

There are three possible sources from which the motives to education may proceed, viz.:

1. The actual recipient.
2. Parents or guardians.
3. Society in its collective capacity.

Examples of the first class are rare, and are exclusively confined to recipients who have already reached the age at which education should be nearly complete. Such cases are rendered possible only by defective systems which neglect some until they come to the age of reflection and perceive the great need of education. A proper system would render all such cases impossible, and thereby eliminate the first class entirely. For in no proper sense can children be said to desire education. Very few crave knowledge, even after they have been given the opportunity of tasting its sweets, with sufficient force to overcome their love of play and freedom. Until first taught somewhat, no child ever desires any such knowledge as education confers. The desire for education on the part of the actual recipients, therefore, can not be regarded as in the smallest degree constituting a *demand* for it, such as tends to induce a supply in the commercial sense.

To them education is exclusively a matter of blind obedience to some authority. Every system of education, however free from state interference, must possess this character. It is nothing more than applies to all the acts of parents in the rearing of children. It is compulsory in the sense that it is required as a matter of obedience to authority, and it is immaterial in this respect whether such obedience be yielded through fear or through love. So far then as the recipients of education are concerned, a system conducted by the state is no more compulsory than one conducted at the homes of the pupils. State and private education are in this respect identical.

In education the economic laws which control other forms of enterprise are not only inapplicable, but in many cases they. are directly reversed. This is the case with respect to the motives and the requirements. In general, those who most need education desire it least, or rather, manifest the strongest aversion to it. Youth is the period when the mind is most plastic and impressible. It is therefore the proper time to impart such knowledge as is within the capacity of the mind. Yet the love of knowledge increases in children with their age and with the amount supplied. Those who have most need least, and those who have least need most; but those who have most want most, and those who have least want least. If, therefore, education has any value at all, it is clearly nonsense to talk of leaving it to regulate itself, which is equivalent to leaving it wholly unsupplied.

The second class in whom the motives to education may reside, viz., parents and guardians, is a more legitimate one, since many such do desire it for their children and wards. Here the demand, consisting of many such desires, may and does secure a normal supply. This supply will correspond to the demand, *i. e.*, no more education will be supplied than is demanded, those who do not desire it will not have it, those who desire it least will have least, and each one will have about the amount he is willing to pay for. This is the character of all private education. It is the approximately exact supply of a greatly varying demand. The variations in this demand are not only quantitative, but qualitative. Not only will each one obtain about the same amount of education for his children that he desires them to have, but he will also secure for them something like the same kind. Individuals differ as much in their ideas of what constitutes an education, both in amount and in kind, as they do in all other characteristics. Hence all degrees and all kinds of education will necessarily be secured.

There exists one practical consideration which tends somewhat to lessen the degree of variation and heterogeneity of private education. This is the fact that it is economical to combine a number of these varying desires under one general direction, the children of many parents under one teacher. For the sake of economy each is willing to yield somewhat of his own peculiar preferences and allow at least an apparent uniformity. This is education as a business. The teacher, like the tailor, is obliged to suit his customers. He lives by his trade, and he must retain the patronage of those he serves. The differences existing in the desires of parents, and which are nominally ignored by co-operative instruction, are really recognized and respected by corresponding variety in the treatment of the pupils. A few parents have a sincere and intelligent desire to have their children acquire knowledge. The wishes of this class are complied with, as nearly as may be. Many conceive education to consist in attending school a certain length of time, passing through certain books, and receiving certain certificates. These, too, are gratified to the best of the teacher's ability. Others have ideas of their own about what their children ought to learn and are to become, and require them to be placed on special diet. Of course, the actual capacity of a pupil can have nothing to do with his rate of progress. In private education there is truly "no such word as fail." For a pupil to fail at an examination would be for the teacher to lose a patron and a part of his income. The great laws of business economics will regulate such matters as that. This is the self-regulating system. If a parent requires his son to complete his studies within a prescribed period, the teacher, on pain of having him removed to another school, will readily find means of proving his superior capacity and bringing him through with honors. Children of wealthy parents must of course receive special favors, and those whose parents regard them as precocious must be so marked as to sustain that opinion. The variety of text-books will correspond to the variety of notions which parents hold about them, those which each used "when he went to school," however antiquated, being usually the only ones allowed. Such is, in brief, the general character of private education, proceeding upon the economic principles of supply and demand, the latter consisting in the desires of parents and guardians.

But here, as in the preceding case, it must be pointed out that in reality this law is reversed. The desire of the parents, so far from indicating the true need of education, is in inverse proportion to such need. Those whose children stand in greatest need of it are those who do not desire them to have it at all, and whose children, therefore, never receive it. From these the gradations to such as intensely desire their children to be truly educated correspond rigidly to the gradations in the necessity for education, the case last mentioned being the least necessitous, since, were there no school, the intelligence of the parents would insure a fair education of their children.

The system of private education, all things considered, is not only a very bad one, but, properly viewed, it is absolutely worse than none, since it tends still further to increase the inequality in the existing intelligence, which is a worse evil than a generally lower state of intelligence would be. The redeeming feature, therefore, is that under its operation very little real knowledge can be conferred. The less society has of it the better, and therefore its very inefficiency must be set down as a blessing.

The third and last source capable of moving a system of education is the will of society itself. As in all other cases, this will can only be expressed through the organized authority of society, or the state.

The peculiar aptitude of the state for carrying on educational work has already been mentioned. Its *rationale* consists in the fact that what society desires is what is really needed. The object of education is social improvement. Education is really needed for the purpose of making better citizens. This is practically the same thing as the higher end, social progress, which we saw to be the condition to increased human happiness. If education can not accomplish this end, it is worth nothing. Neither the recipients of education nor their parents regard it in any such light. With the former no desire exists. With the latter it is some personal caprice, some parental pride or social emulation—an empty motive leading to a fruitless result.

Again, society desires most the education of those most needing to be educated. From an economical point of view, an uneducated class is an expensive class. It is from it that most criminals, drones, and paupers come. From it—and this is still more important—no progressive actions ever flow. Therefore, society is most anxious that this class, which would never educate itself, should be educated. The universality of education, which is the logical sequence of its enforcement by the state, will be more specially considered presently.

The secret of the superiority of state over private education lies in the fact that in the former the teacher is responsible solely to society. As in private, so also in public education, the calling of the teacher is a profession, and his personal success must depend upon his success in accomplishing the result which his employers desire accomplished. But the result desired by the state is a wholly different one from that desired by parents, guardians, and pupils. Of the latter he is happily independent. This independence renders him practically free. His own ideas of method naturally harmonize more or less completely with those of the state. Systematic organization is what he constantly feels to be needed. Uniformity not only vastly facilitates the labor of teaching, but it enormously increases the product of educational effort. The teacher also naturally prefers to see his pupils improve and acquire sound knowledge. The tricks of diplomacy at the expense of educational progress, to which he must resort in order to please the fancies and gratify the caprices of the heterogeneously-minded patrons of his "select school," are irksome in the extreme. Freed from the necessity of planning to meet such cases, he finds time to plan true educational work.

Once more, state education is far better for the pupil. It is distinguished fundamentally from private education in dealing with all in a strictly impartial manner. The lowest *gamin* of the streets here meets the most pampered son of opulence on a footing of strict equality. Nothing counts but merit itself. Pupils take their places according to what they are, not what they are called. Public education operates as a gauge of the capacities of the mind. Each mind is, as it were, measured and its capacity recorded. A thorough trial of it would doubtless be of the highest value, merely as a means of eradicating popular errors respecting the fancied superiority of birth, rank, and station. But this is not its aim. Its aim is to diffuse intelligence. The fact that, under its undiscriminating rule, each mind must find its natural level, wholly regardless of conventional circumstances, is simply an incident to its operation. The child comes to look upon it as he looks upon other processes of nature, as something over which he has no control. He feels that in coping with it, as in coping with other natural forces, his success will be determined by his power. It is not something which can be accommodated to his whims.

His tasks can not be shirked, or imposed upon other more willing ones. Violations of its requirements, like violations of the laws of health, bring their own certain penalties, and he learns to regard it, as he regards the other natural forces to which his life is subject, as both inexorable and irresponsible. This kind of discipline is the most valuable that could be administered, and does more to square up the character than any amount of moral teaching.

Lastly, public education is immeasurably better for society. It is so because it really accomplishes the object of education, which private education does not. What society most needs is the distribution of the knowledge in its possession. This is a work which can not be trusted to individuals. It can neither be left to the discretion of children, of parents, nor of teachers. It is not for any of these to say what knowledge is most useful to society. No tribunal short of that which society in its own sovereign capacity shall appoint is competent to decide this question. To the teacher duly trained for his work may be left certain questions of method, especially of detail; but even the method must be in its main features unified with a view to the greatest economy in its application. This must necessarily also be the duty of the supreme authority.

If society ever collectively realizes what the ultimate end of its being is, and comprehends the true relations of the hierarchy of means to that end, it will necessarily regard the distribution of knowledge as the one great function, outside of its regulative functions, which it is specially constituted to perform. It will concentrate its entire dynamic energy upon it, to the neglect of all those ends which, as we have seen, must follow from this one initial motive power.

The state education implied in the foregoing remarks is, of course, ideal state education. That no very near approach to it has ever yet been made is apparent. Society has not yet recognized in any well-defined form the first principle upon which its title to perform this function rests. It does not realize the nature of the disease with which society is afflicted, much less that of the remedy to be applied.

There does, however, exist a vague conception of the superiority of state education. It has been perceived that, where education is left to private efforts, it is limited to a comparatively small proportion of the members of society. It has also been realized that in some way education is a social benefit. These two conceptions have already become so definitely formed in the public mind that in most civilized countries systems, more or less efficient, of public instruction have been adopted. That of Germany is supposed to be the most complete, but it consists of the education of culture and the education of research, paying very little attention to the diffusion of knowledge. In France public instruction is of later origin, and, though of late it has been greatly improved, a large proportion of the educational work is still intrusted to private enterprise and to religious societies. In England, *laissez faire* principles so far prevail that no system of public education can be said to exist. As a consequence, while there are many intellects of the very highest capacity, the masses are in a state of abject ignorance.

The systems of state education in the United States have been devised by the several States of the Union, and are exceedingly heterogeneous and defective. In certain States scarcely any thing worthy of the name of education exists, while in others the systems have attained a high degree of perfection. Defective as these are, however, they have certainly exerted an immense influence upon the people, and done much to render them capable of self-government.

While in all existing systems of state education, discipline, culture, and origination occupy much more prominent places than information or distribution, still in all there is doubtless much real knowledge conferred and great benefit derived by society. In all, however, there exists one fundamental defect, which goes far to neutralize their advantages, and stamps them all as unworthy to be regarded as the work of enlightened society, conscious of its interest and its needs. This defect and its remedy we are next to consider.

UNIVERSAL EDUCATION.

The third cardinal principle which inheres in our definition of education is that it must be *universal*. The knowledge which society requires to be extended to one it must require to be extended to all. Otherwise the true end in view is not attained.

We have seen that in matters of education the ordinary laws of economics do not apply, that in many particulars they are reversed. In addition to the anomalies pointed out a few pages back, we have now to recognize the important fact that the value of education increases in an accelerated ratio as the number of uneducated diminishes. Just as the shepherd rejoices more over the one sheep that was lost and is found, than over the ninety-nine that went not astray, so society, when it fairly realizes its interests, will care more for the education of a mere handful hitherto neglected than for the mass already provided for.

It is to knowledge that civilization is due, and the true object of education is to confer knowledge. Civilization, as much as religious belief or moral character, is a personal matter. It is as false to call all the inhabitants of the so-called civilized world civilized, as to call all the people in Christendom Christians. Both these errors are prevalent. A civilized man must be a civil man, a gentleman. He must be assimilated to the conditions of civilization around him. The mark of a barbarian is not the language he speaks nor the deity he worships. It is his rude intellectual development, his narrow range of views, his rough treatment of others. Every thing that distinguishes a savage from a civilized man can be directly or indirectly traced to the differences of education. From the native Guinean to Toussaint L'Ouverture, from the prehistoric cave-dweller to the *savant* who studies his ancient abode, only differences of civilization are perceptible. Doubtless there are differences of brain-development, but education, when long periods are considered, is the most potent agency in developing brain.

But civilization must reach its object in order to effect it. Left to chance, there are a thousand ways in which its influence is escaped. In sweeping down through the ages, it has only skimmed the surface of society. The great, the exceptionally talented, the influential, the fortunately circumstanced, the heirs of plenty and of leisure, such alone have reaped its advantages. The mass has scarcely felt its breath. In more recent times great reorganizing and redistributing agencies have upturned the ancient systems, and civilization has been more generally diffused. But, in this, chance has still ruled supreme. Modern civilization is wholly unsystematic. Those to whose lot it has chanced to fall have received it in proportion to their opportunities. A thousand angles and eddies have been missed entirely. A large proportion of the inhabitants of the civilized world are still uncivilized.* In every large city there exist throngs of true barbarians—nay, savages. Throughout the regions of the globe where civilization prevails, there are multitudes who are not in the least assimilated to it. They are, by their culture and conduct, far better adapted to Zulu-land or the Fiji Islands. They make the great bulk of the pauper, beggar, and criminal classes of every country. The total cost of supporting, punishing, and guarding against them constitutes half the charge of all legitimate government.

Yet this so-called "heathen population" have normal faculties and developed brains. Their bodies form the only attainable "subjects" for anatomical study, and it is upon their study that our ideas of the human system almost wholly depend. Of course, this is a disgrace, since anatomy should be studied from the most perfect specimens of the race, both physically and intellectually; but it shows that educationalists do not believe the immense gulf which separates these savages from civilized men to be due to any perceptible deficiencies in their physical constitutions.

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* Lubbock, "Origin of Civilization," p. 323; Hugh Miller, "Testimony of the Rocks," p. 272; Carpenter, "Mental Physiology," p. 108.

Just as poverty in the midst of wealth aggravates its evils, so ignorance in the midst of intelligence is intensified by the contrast.* A generally low state of intelligence is comparatively harmless, since there is a normal degree of correspondence among all the parts of the social fabric.† But a stolid and vicious class in the midst of science, learning, and culture, like a "bull in a china-shop," presents such a complete state of inharmony and unfitness that the effect is out of proportion to the cause. Civilization, like all organized progress, has only been achieved at vast expense to the social energies. Its constitution is necessarily delicate in proportion as it is refined. Its differentiation has gone so far, and its integration is on so extensive and exact a scale, that it will not stand to be rent in pieces by internal discords. Every assault of savagery upon so complicated and expensive an organization costs society an immense sacrifice, and is felt in all parts of the social system. It can not afford thus to nurse a viper daily threatening its life.

There is even a worse consequence. So long as society has this burden on its shoulders it can not progress in refinement. It must cling to a large part of its old crudeness, as a protection against its unassimilated membership. It must be perpetually hampered by a heavy coat of mail in consequence of the perpetual dangers that beset it. This tends powerfully to neutralize the progressive agencies within and to equilibrate the rhythm of its motion. In a word, while the state of civilization around them has no tendency to raise the uncivilized classes up toward its level, but rather aggravates the contrast, the presence of these classes in the midst of civilization tends powerfully to lower the condition of the latter and clog its advance. The need of ridding itself of these classes, therefore, becomes twofold, and, since they can not be annihilated, and will not civilize themselves, the importance of undertaking their artificial civilization is doubly great.

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* Says Dr. Daniel Hack Tuke: "It is constantly forgotten that, while there is nothing better than true civilization, there is something worse than the condition of certain savages, and that almost any thing is better than that stratum of civilized society which is squalid, and drunken, and sensual; cursed with whatever of evil the ingenuity of civilized man has invented, but not blessed with the counteracting advantages of civilization." ("Macmillan's Magazine" for December, 1877, p. 132.)

† Lubbock, "Origin of Civilization," p. 262.

It is evident, therefore, that any system of education which falls short, even in the least particular, of absolute universality, can not proceed from any true conception of what education is for, or of what it is capable of accomplishing. Civilization is essentially artificial at best, and is in no way changed in this respect by being artificially and teleologically extended to all the members of society. The only effect is to hasten its progress and lessen its cost.

While the equal distribution of knowledge will thus prove an immense gain to society in preventing the encroachments of the ignorant upon the intelligent, it will prove of equally great value in preventing the encroachments of the intelligent upon the ignorant. Indeed, it is difficult to decide which of these weighty arguments for universal education is the more convincing. Either is alone sufficient; both taken together, conflicting at no point, but harmonizing throughout, are overwhelming.

Looking at the subject from the point of view of social welfare alone, it is obviously less important that a great amount of intelligence shall exist than that the data of intelligence shall be in possession of all alike. The end of life is enjoyment, not intelligence. The latter is only a means to the end, and to be worth any thing it must exist in such a form as really to constitute such a means. It is demonstrable that intelligence may, and often does, exist in forms which render it a positive evil in society.* The knowledge which enables man to manufacture intoxicating beverages is unquestionably an immense damage to society, and strikes directly at human happiness. The knowledge which enables one class of men to enslave another class brings misery to thousands and enjoyment to but few. The greater part of the evils of society, which are usually and correctly ascribed to ignorance, might with almost equal propriety be ascribed to intelligence. The ignorance which causes them is only *relative* ignorance. The power that enacts them is the power of relatively greater intelligence.

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* Tylor, "Primitive Culture" (Boston, 1874), vol. i, p. 28.

Some thoughtful and well-balanced minds will doubtless say of the proposed scheme of education that it is only one of the many panaceas that are constantly being recommended by those who see all things from one single point of view. Others will wonder why so little is said in this work of the great social economic problems; why the distribution of wealth, rather than of education, is not insisted upon, since happiness depends greatly upon the possession of the objects of desire; why the contrast between civilization and barbarism, intelligence and ignorance, has been so strongly drawn, while that between wealth and indigence, "progress and poverty," has been neglected. The answer to all such criticisms must be that the sole object of this treatise is to arrive at the *initial means*, and that even did space permit, as it clearly does not, all other means to the common end of all reformatory writers, would be purposely neglected. And it is high time for socialists to perceive that, as a rule, they are working at the roof instead of at the foundation of the structure which they desire to erect. Not that much of the material which they are now elaborating will not "come in play" when society is ready to use it, but that their time would be better spent in working out the basal principles which will render social reform possible. Present attempts in this direction consist essentially in seeking to attain progress or even happiness *directly*, as ends, without employing the necessary means. Their failure is therefore as certain as their efforts are premature. The fact is, that these ends will take care of themselves whenever the proper means are adopted. Not that they will come without action, but the adoption of the proper means will necessarily dispose to action, and action must result, and of the kind and amount necessary to secure the end.

The distribution of knowledge underlies all social reform. So long as capital and labor are the respective symbols of intelligence and ignorance, the present inequity in the distribution of wealth must continue. It may be urged that, since there exists so great inequality in the natural capacity of the human mind, there must still ever exist, even after knowledge shall have been equally distributed, a corresponding inequality of intelligence, and that therefore the proposed change will only substitute one species of inequality for another. The answer is twofold:

First, the differences in native capacity, though admittedly great, are small compared to the differences of information. The supposed intellectual inequality is greatly exaggerated. The large fund of good sense which is always found among the lower, uneducated classes is an obtrusive fact to every observing mind. The ability with which ignorant people employ their small fund of knowledge has surprised many learned men. While there may doubtless be found all grades of intellect, from the highest philosophic to the lowest idiotic, the number who fall below a certain average standard is insignificant, and so, too, is the number who rise above it. The great bulk of humanity are fully witted, and amply capable of taking care of themselves if afforded an opportunity. In fact, it is out of this class that the majority of the great names of history have been taken. It is a mistake to suppose that the sole element of excellence is superior intellectual power. It is usually an average intellect joined to an indomitable will, a tenacious perseverance, or an unquenchable ambition. It is *emotional* force, not intellectual, that brings out exceptional results. This is unfortunately often too apparent in the labors of so-called "self-made men," whose real intellectual mediocrity, though overlooked when accompanied with so great energy, renders the results achieved comparatively worthless and short-lived. On the contrary, the really best minds are not the ones that accomplish most. They usually lack aspiration, they are too critical, too sensitive to the least defect. Great causal penetration and all-sidedness are antagonistic to energetic, independent effort under difficulties. Contrary to the common belief, the most permanently useful and solid work that has ever been done has come from such minds when so circumstanced as to find themselves in the very current of their labors. Had they not been so placed, they would probably never have made the effort necessary to place themselves there. The best minds require to have opportunity brought to them. Those who seek opportunities and create circumstances do so by virtue of emotional forces which usually accompany only average talents.

It is a prevalent belief that so-called self-made men attain their distinction in consequence of the adverse circumstances against which they are compelled to contend. The phenomenon so frequent in modern times of men working up from obscurity to eminence is supposed to support this view. Looked at more closely, however, this argument is found to involve a fatal fallacy. It must first of all be remembered that "obscurity" embraces all but a minute fraction of the human race. The proportion to their class of those who thus rise out of it is next to infinitesimal. On the other hand, the class having means and leisure is numerically very small. One case of distinction from this class would be relatively equal to all that can be named from the other. Yet no one can deny that there are many great names belonging exclusively to the latter class. It is sufficient to mention Lord Bacon, Sir Isaac Newton, Alexander von Humboldt, Sir Charles Lyell, or Charles Darwin, in order to show that leisure is not, as is claimed, a detriment to aspiration. It shows, on the contrary, that the want of it is the great barrier to intellectual excellence; that poverty and monotonous toil crush out millions of potential luminaries in society. Yet the phenomenon of self-made men is not without its lessons. It teaches the average native capacity of all men, without regard to rank or circumstances, a truth which is also generally ignored or denied, and whose denial is often made an argument against universal education, as is the fallacy just pointed out. The other fact of the relatively frequent rise of men of leisure to eminence, and the great achievements of such men, also teaches a useful truth, viz., that if the true merits of mankind are to be all brought out, it must be done by equalizing the opportunities of all. And it should be remembered that, while the work of the so-called self-made men has generally possessed only a temporary and fleeting value, that of men of leisure has usually possessed a permanent and lasting value. This is partly because all truly useful work requires *preparation*, and this the mushroom growth of the self-made man can not provide.

Thus some of the most specious arguments against education in general, and universal education in particular, are seen to rest upon facts which, rightly interpreted, really argue powerfully in their favor.

Mediocrity is the normal state of the human intellect; brilliancy of genius and weight of talent are exceptional. To read the current literature of the age, one would think the reverse to be the case. All calculations are based on the possibilities of the highest; the low and the average are wholly ignored. Too much stress is laid on the exceptions, and no importance is attached to the normal cases which constitute the great mass. This mass can not be expected to reach the excessive standards of excellence which society sets up. The real need is to devise the means necessary to render mediocrity, such as it is, more comfortable.

The fact that most of the important contributions to science and literature emanate from men holding chairs in universities or high official posts with abundant opportunities, and which bring them into direct relation with their subject, makes it evident that almost any one else under the same circumstances would have done equally well; or at least if some would have done less well others would have done better, the chances either way being about equal. These and a thousand other facts tend to show that the distinctions now so apparent between men are for the most part differences of position, of education, of opportunity—artificial differences—and that the real, or intellectual, differences are comparatively slight.

Secondly, admitting, as we must, that such differences exist, and are, when regarded absolutely, very considerable, we must still insist that the inequality of intelligence resulting from them alone is, as regards its effects upon society, comparatively harmless. Whatever may be the inequality of advantages thus produced, they must be due to inequality of *merit*, and not of accident or chance. To this none would reasonably object. It is a return to the natural and normal state of things such as prevails in the animal world. Each individual would hold his natural position in society. In this case, at least, the natural is superior to the artificial condition, but the natural condition can only be secured through the use of highly artificial means (*supra*, p. 473).

In this condition must also be found the true solution of all those troublesome questions about which the prophets of a millennium have so needlessly and prematurely worried. While with advancing intelligence higher views of the dignity of labor will prevail, still the varied kinds of labor will, as now, differ in the degree of talent required to perform them. But the natural differences of intellectual capacity will be great enough to furnish each vocation with laborers who are capable of performing its duties, but not capable of performing those of higher grades. The adaptation must necessarily be more complete than now, when sages do menial service and fools rule empires. The fitness of things will then reach its highest stage of completeness, and servants as well as poets will be "born, not made."

The present enormous chasm between the ignorant and the intelligent, caused by the unequal distribution of knowledge, is the worst evil under which society labors. This is because it places it in the power of a small number, having no greater natural capacity, and no natural right or title, to seek their happiness at the expense of a large number. The large number, deprived of the *means* of intelligence, though born with the capacity for it, are really compelled by the small number, through the exercise of a superior intelligence, to serve them without compensation. This is the result of the ultimate analysis of the problem of the present unequal distribution of wealth. For it is not the idler, but the toiler, the real producer of wealth, who has none; while the man who has wealth is usually a man of leisure—at least he has rarely or never acquired it through labor in creating it. The former occupies his position solely in consequence of his *relative* ignorance, the latter occupies his solely in consequence of his relative intelligence. Knowledge is power, and power has ever been wielded for self-aggrandizement, and must ever be so wielded. To prevent inequality of advantages there must be equality of power, *i. e.*, equality of knowledge.

There are a thousand subtle ways in which the superior intelligence of the capitalist operates to reduce the inferior intelligence of the laborer to his service. One of these is by adroitly making actions appear bad or criminal when done by the latter class which are regarded as proper when done by the former. This is done by giving the same general class of actions different names under the two circumstances, and in other ways so obscuring their identity as to make them appear very different things.

As an illustration, let us take the case of co-operation. Owing to the inherent character of the social forces as exemplified throughout the workings of nature and of human nature, one of the means of increasing power to secure desired ends which was earliest adopted was the union of many individuals for the joint accomplishment of a common object which intelligence taught them could not be accomplished by action in severalty. Society itself and government rest on this principle. So also do all the great industrial and commercial enterprises of the world. And it is right that they should, since in no other way could any great results be achieved. But the consequence is that, while the intelligent classes have co-operated and by means of co-operation have become the capitalists and employers, the ignorant classes have worked individually and independently, and have been compelled to turn over to the capitalists without any equivalent the greater part of the value they have created. In modern times the latter are able to perpetuate their hold upon the labor of the former by establishing influential organs and molding public opinion. The laborers have few if any such avenues of communication, and indeed could make little use of them if they had them. Those who are able to read at all, therefore, read the organs of the capitalists, and, unable to penetrate their sophisms, and hearing only the one side, they acquiesce in, and even defend, their views. This genuine co-operation on the part of capitalists does not go by that name. In fact, it is not called any thing. It is simply recognized as the only proper and successful way to do business; and such it really is. But any attempt on the part of the laboring class to co-operate on the same principle and for the same object is loudly denounced as a sort of crime against society! The laborer is actually made to believe that it is so, and the state frequently steps in to punish it as such. When this plan fails, as it sometimes does, other specious fallacies are spread before the public which are often as much more effective as they are more mild and strategic, marking the normal method of the intellect in circumventing the feelings and the muscles. Only to-day a leading British economic journal * is found shrewdly accounting for the

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* "Capital and Labour," May 31, 1880, p. 199.

fact that wages have not risen in proportion to the rise of prices and the increase of business, on the principle that employers have got into the habit of awaiting the action of the trades-unions, and claiming that but for the latter they would probably have voluntarily effected a general increase of wages! The truth probably is, that wages are much higher now on account of the power of trades-unions, while with or without that power wages would never be raised until a greater loss was feared from not raising them than from doing so. This is a typical illustration of the astute manner in which intelligence ever seeks the protection of its own interests, wholly regardless of the interests of others. So delicate and apparently disinterested an argument as this might have the effect to weaken materially the power of trades-unions by making their perhaps already partially disaffected members believe that they would have been better off without them.

Not to multiply instances, for which this is clearly not the place, it must suffice to point out that even government itself employs this same means in many ways for its own support. One capital example will illustrate how it does this. The masses of the people, even in republican states, little dream that they have to support most of the operations of the government out of the daily labor of their hands. An idea prevails among them that it is the wealth of the country which does this. If told that he has to pay heavy taxes, the landless day-laborer or mechanic would at once deny it, and declare that he had nothing to be taxed. Yet he does pay these taxes in the increased price which he must give for a large number of the most useful articles of food and clothing, for his pick and shovel, his jackknife and cutlery, his hardware and crockery. These articles are all taxed on entering the country, or, if manufactured here, their price is high on account of the duty on similar articles of foreign manufacture. Thus a very large proportion of the revenue of the United States, at present much more than half of it,* is raised in such a way that the man who has no property at all pays about the same as the millionaire.

But it may be said, How does this illustrate the issue? In this way: This state of things could not exist if every body understood just what its effect is. It is the ignorance of constituencies of the real effect of a "revenue tariff" that makes it a national possibility. Government is compelled to take advantage of this ignorance and collect its revenues, not in the manner that will least burden the people, but in the manner that will be least objectionable to the people. For to substitute direct taxation, upon either property or incomes, for the present impost revenue, would raise a storm of opposition throughout the land, and the worst victims of the existing system would be found flocking to the polls to hurl the authors of their deliverance from power. The intelligence of the men of property and large incomes would certainly persuade the ignorant mass that the change was an outrage on common rights, and inveigle them into aiding in its defeat, while the man of small property or income would rather pay a hundred dollars a year more for the necessaries of life than ten dollars in direct taxation. This, however, is of course due to his ignorance of the real effect, since no one would knowingly prefer a greater to a smaller loss.

It is surprising that this argument from the unequal distribution of knowledge has not presented itself more forcibly to writers on education and sociology. Even Herbert Spencer, whose acute perceptions have probed so many obscure truths, seems never to have caught the faintest glimpse of its bearings. This is evidenced by such passages as the following: "Are not fraudulent bankrupts educated people, and getters-up of bubble-companies, and makers of adulterated goods, and users of false trade-marks, and retailers who have light weights, and owners of unseaworthy ships, and those who cheat insurance companies, and those who carry on turf chicaneries, and the great majority of gamblers? Or, to take a more extreme form of turpitude, is there not among those who have committed murder by poison within our memories, a considerable number of the educated—a number bearing as large a ratio to the educated classes as does the total number of murderers to the total population? This belief in the moralizing effects of intellectual culture, flatly contradicted by facts, is absurd *a priori*."[*]

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* The revenue derived from customs during the year ended June 30, 1882, was $220,410,730, the amount of internal revenue for the same period was $146,497,595, the amount derived from all other sources $36,616,925, making a total of $403,525,250, of which it will be seen that the customs furnished more than half.

Without stopping to note some implied inferences in the above which do not appear to be borne out by the facts, or the doubts which the passage leaves as to whether by "intellectual culture" and "educated classes" is meant the merely ornamental education which he so severely characterized in other works, or the education which fits men for the duties of life, which he so stoutly defends, it will be sufficient to remark that no better examples could be found than those here given of the power of intelligence to aggrandize itself at the expense of ignorance, and therefore no better are needed to establish the necessity of the equal distribution of useful knowledge.

Comte, it is true, declares for universal education,[†] but he nowhere clearly indicates the evils of inequality as a reason for it. Others[‡] have advocated the necessity, on one ground or another, of greatly extending the facilities for educating the masses, and even for making them embrace all mankind, yet little more than general principles and love of system seem to have been urged in support of their schemes.

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[*] "Study of Sociology," p. 121.

[†] "Philosophie Positive," vol. i, p. 36; vol. vi, pp. 459, 517.

[‡] Professor Huxley's "Administrative Nihilism" (an address to the members of the Midland Institute, October 9, 1871) contains some fine thoughts and sound views on this question, as also on the *laissez faire* theory in general and its suicidal tendencies. ("More Criticisms of Darwin, and Administrative Nihilism." New York, 1872, pp. 57–85.)

Only in the writings of that prodigy and prophet of science, Jean Lamarck, do we find the very kernel of the problem briefly and tersely laid bare. That the following passage may lose nothing of its native cogency, it is introduced without attempt at translation:

"Je pourrais montrer que, tandis que l'homme retire de ses facultés intellectuelles, bien développées, de très-grands avantages, l'espèce humaine, considérée en général, en éprouve en même temps des inconvénients considérables; car ces facultés donnant autant de facilité et autant de moyens pour exécuter le mal que pour faire le bien, leur résultat général est toujours au désavantage des individus qui exercent le moins leur intelligence, ce qui est nécessairement le cas du plus grand nombre. Alors, on sentirait que le mal, à cet égard, réside principalement dans l'extrême *inégalité* d'intelligence des individus, inégalité qu'il est impossible de détruire entièrement. Néanmoins, on reconnaîtrait mieux encore que ce qu'il importerait le plus pour le perfectionnement et le bonheur de l'homme, serait de diminuer le plus possible cette énorme inégalité, parce qu'elle est la source de la plupart des maux auxquels elle l'expose." *

Compulsory Education.

The objection that universal education implies compulsory education may be conveniently anticipated here. Since all do not desire education, the fact must be broadly admitted. But, when once squarely met, much of its repulsiveness disappears upon closer acquaintance. For what does compulsory education mean? As we have already seen, so far as the actual recipients of education are concerned, all education is compulsory. It is not this that is commonly understood by compulsory education. It is the supposed hardship of requiring parents to send their children to the public schools. It is thought that this is an unwarrantable abridgment of the liberty of adult citizens.

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* "Philosophie zoologique," vol. ii, pp. 315, 316.

It has already been pointed out that government usually seeks to attain its ends by negative, or prohibitory, rather than by affirmative, or mandatory, enactments. It was also seen that this was because all direct efforts to attain ends are so difficult. A negative effort is the first step toward an indirect proceeding on the intellectual plan, and, as such, is in so far more successful than a positive direct effort. The odium of all mandatory laws is a good illustration of this truth. Yet such laws are by no means rare. They are constantly being enacted, and are more or less successfully enforced. The objection to them is often irrational, and is the cause of heavy losses to society. The case referred to above, of the groundless opposition to direct taxation, is also in point here. In fact, the collection of taxes by a state generally involves affirmative legislation, and its universality and success furnish a sufficient reply to the general charge against such legislation. It happens, however, to be an unusually appropriate example in the present connection, since the same ones who imagine it to be a hardship to be compelled to patronize the public schools usually have to pay taxes, not only for defraying the general expenses of the government, but also for defraying the expenses of these same schools. These they pay, with only the customary opposition.

It is the word *compulsory* rather than the meaning it really conveys which is so objectionable. All action in society is constrained action. Every thing any one does is simply a choice among many things he might do. Not alone by the national code, but also by the moral and conventional codes, we are all *required* to make constant sacrifices and sustain many important losses. If this were always upon the whole to our advantage, there would be less cause to complain. But all these powers which so absolutely control our conduct are perpetually compelling us to do useless things, and forbidding us to do harmless ones that we desire to do. We all submit almost without remonstrance. Those who are unwilling to allow the state to educate their children submit with the rest. Why, then, should they deem it a hardship to be required to perform the most important duty which a citizen can render to his country? But it is not as though this opposition were deep-seated and wide-spread. It is only a few even now who, without compulsion, are absolutely unwilling to patronize the public schools, such as they are. Those who believe in education at all—and most men have some idea of its value, though they may at first object, as they would to any change—soon come to see the personal advantage which it secures to themselves. Aside from the feeling that they ought to derive some benefit from the taxes they have to pay, they soon perceive that they are exempted from the payment of private tuition. Thus the dictates of pecuniary interest, the most powerful of all influences, tend to diminish the original aversion to public instruction. The few who object on the ground of conscientious religious scruples, considering the entirely secular character of state education, are not sufficiently numerous to command respect. The only remaining class is the poor and ignorant, who know nothing of education or its value. This class is large, it is true, but it is for their more especial benefit that state education should be established. To allow these to have a voice in the matter would be suicidal to the whole scheme. They are the true game of education. From this point of view, paradoxical though it may be, every such citizen is of vastly greater value to society than an enlightened citizen. He has a negative value. While each such citizen must now be counted as a negative term in the equation of civilization, education converts him into a positive term. His value, therefore, when reached, is twofold. The great superiority of state over private education, from this point of view, is, that it can compel this class to become educated. Unless it does this, it can scarcely be said to have established its right to exist. To argue hardship here is to give undue dignity to an unworthy and unprofitable element. Such respect would not be appreciated any more than a fine point of honor is appreciated by a savage.

But there is another point of view from which this question may be regarded. It is due to this class that the state stretch forth its arm in their behalf and elevate them to full citizenship. It is really not their fault that they are what and where they are. They are simply the victims of the existing social system. They have been crowded further and further down by the force of unorganized circumstances. The state has stood by and calmly witnessed the process by which this has been effected. It has seen the social forces work out this result, and has not interfered. It has winked at the inequality of intelligence due to the inequality in the means of acquiring knowledge, and now it is paying for its neglect by being compelled to support paupers and prosecute criminals. Aside from its duty to itself, it owes a duty to this merely unfortunate class, and it can not plead the lack of willingness on their part as an excuse for longer neglecting this duty. They can not be expected to be competent to reason out what constitutes their true interests. Society *does* know and should take immediate steps to secure them, especially since in so doing it will secure its own.

While the scope of what can really be called compulsory education is thus narrowed down to a few fanatics and the irresponsible dregs of society over which the state should exercise absolute control, there are ways in which it might doubtless be still further narrowed. As nearly all social action is already constrained action, and much of it consists in a choice between two evils, human ingenuity is capable of making much of this latter a choice between two advantages. In other words, much of the action which is now unpleasant may be rendered agreeable, and much that is now done because it is required may be done because it is desired. Instead of being compelled to patronize the public schools, parents and guardians should be *induced* to do so. Even the lowest classes are capable of being thus *attracted*, and nothing should be left undone to secure this consummation.

The many practical questions which rise upon the consideration of an absolutely universal education, while they are not ignored, can not be here treated with that completeness which it is admitted their importance demands. They are questions of detail, of method, of administration, and would require a separate volume for their thorough consideration. All that can be said is that no practical objection can be sufficient to detract from the importance and necessity of the end itself, which is nothing less than the completion, by teleological direction and intelligent foresight, of the work of civilization which nature has begun but is unable to finish.

While the word *universal* ought to convey to the minds of all a sufficiently definite idea of its meaning in this connection, a few remarks upon its scope may not be wholly without use. Recognizing the fact that there exist all grades of native capacity for receiving education, it must be admitted that there exists a minimum limit to the degree of intellectual power which would repay the attempt to impart information. Below this lies the class which, while still differing from one another, must, for all practical purposes, be regarded as idiots. But, while these gradations are to be found when searched for, it must not be supposed that there is any corresponding *numerical* gradation. These cases of undeveloped intellect are the mere exceptions, and must be regarded as in a certain sense abnormities, or monstrosities. The fact that this class does not admit of education does not affect the other fact that the great mass of mankind does admit of it. It can not be concluded, because many human beings are so sunk in ignorance as to appear almost idiotic, that such are incapable of receiving information. On the contrary, there is no knowing what powers may be made to spring forth from such repulsive sources. There is such a thing as *latent intellect.*

Throughout society there are limits between which the sum of intellectual vigor in all its manifestations (faculties) in any one mind simply oscillates. In some minds, this coefficient is equally distributed among all the faculties (well-balanced minds). In some, it is more or less concentrated in some one set of faculties at the expense of the rest (great specialists and geniuses). In a few, it is almost totally absorbed in one single faculty, leaving the rest of the mind next to idiotic (prodigies). In a great many, the particular faculty in which the mind might have displayed its power never finds an opportunity to manifest itself, the proper circumstances never presenting themselves for its development. It is in such cases that it may be said to be latent. This class embraces the greater part of those who are reputed dull, stolid, or generally uninteresting. They have never found their element, and, like a sloth on the ground, their mental activities seem awkward and sluggish.

When we reflect how few opportunities exist for the development of certain aptitudes, and yet how often these few openings are filled by men who seem to have been born expressly for them, dismissing the supernatural view which may be said to prevail, that such cases are providential coincidences, the thoughtful observer is led to reflect upon the probability that there exist throughout society minds fully capable of matching the most brilliant examples which the race has produced, but which, for want of opportunity, never shed a single ray of light from the fire that smolders within them. Putting this with many other facts and deductions which society as it exists affords, the error of supposing that it is of no use to educate any class because it is now low, or any individual because he is dull, becomes obvious, and another powerful argument for universal education is furnished.

The adage "No excellence without labor" would be equally true, though a truth too obscure to have ever become an adage, had it been "No excellence without opportunity." Where opportunities are rare and talents equally rare, since these must join to produce any results, such results are doubly rare. But talent can not be created artificially, while opportunities to a great extent can be so created. Unless the circumstances are favorable, success is impossible. The circumstances which conspire to create opportunities are of many kinds and degrees. Many of them are too special to admit of being generally produced and brought within the reach of all. But there are many that admit of this in varying degrees. Universal education could not fail to extend many such fundamental advantages to all mankind equally.

There is one such fundamental circumstance which may, from this point of view, be regarded as the mother of circumstances. This consists in an initial acquaintance with the given field of labor—knowledge that such a field exists. There has been no discoverer so great in this world as to owe nothing to this circumstance, none who might not have lived and died in the profoundest obscurity had not some external force first lifted him to that height, however humble, from which he was able, more or less clearly, to overlook the field of his future labors; none, who, had he chanced to live in another land or a prior age, could have achieved the results which he was enabled to achieve under the actual circumstances. The number of Newtons who may really be said never to have had an opportunity to watch an apple fall to the ground, may be great; for to the sons of toil and want and circumscribed existence, reflection even is forbidden. It is just this initial circumstance, this vision of the promised land, that education is specially adapted to furnish to those naturally bright minds whom fortune has restricted to dark and narrow regions.

There will come the objection from the value of time. Many parents commence to derive assistance from their children at an early age, and others apprentice them long before they can have received the amount of education which society should require of all. None of these considerations, however, should be allowed to have any weight except in dictating a policy which shall bring the minimum discomfort from these causes without in the least prejudicing the end in view. Should the case be so severe as to threaten parents with pauperism, it is far better that they be placed on the dependent list and supported by society than that their children should grow up in ignorance only to follow in their footsteps. The making of a few paupers is a less evil than the failure to prevent many from becoming such. It is still more for the good of the children thus educated. For not only is the prevailing child-labor a crying evil in society, but labor at large has as its only hope the intelligence, *i. e.*, the education, of the laborer.

Much the same general argument applies to those homeless and houseless urchins of the streets who live by selling newspapers, or perhaps by trivial thefts and sharp practices, or by begging. Independently of education, this class are proper subjects for state guardianship. They are to some extent a dangerous element, and their mode of life tends to render them more so when they become men and women. Add to this that they are usually endowed with very acute intellectual perceptions, and are fully capable of coping with the rest of mankind. They are therefore in a peculiar sense the fit subjects of public education.

It is scarcely necessary to say that universal education means the education of women as well as men; yet so much is it the custom to speak of the male sex as constituting all mankind that a few might not make the effort to throw off this feeling without this statement being expressly made. The position of women in human society is so absurdly anomalous that whatever is intended to include them must have this particularly expressed, else it will be apt to be inferred that they are excluded. While it may be successfully maintained that, so far as universal public education can be expected to extend, the equal education of women must benefit them as much as it benefits men, still, if men really were the alpha and omega of society, as the current theories imply, if women existed only as the means of continuing the race of men, it would still be necessary for the sociologist who knew any thing of the laws of biology, upon which all sociological truth rests, to insist upon the equal development of both sexes. Most modern theories of human progress, if they do not wholly ignore the laws of heredity, at least neglect one prime factor in the workings of heredity. This is the universal fact that the offspring inherits its qualities from *both parents alike.* Any theory of development, therefore, that recognizes the fact of the transmission of acquired qualities must expect that where only one parent has acquired such qualities the offspring will only inherit one half of them. If the full value of the energy expended in conferring useful qualities is to be realized in the offspring, they must be conferred equally upon both parents. Estimating women, therefore, as mere breeding-stock, as is virtually done to so great an extent, and granting that men do every thing that is of any real value to society, still not the smallest expense of money or energy bestowed upon the education of the female sex could be lost to male posterity. Those who are looking to some form of artificial selection, or human stirpiculture, as a means of accelerating the intellectual advancement of the race, would therefore do well to consider that, in the education of all women and their general intellectual elevation, they may find the initial step toward the scheme which they are advocating. Instead of trying to secure a superior stock from a few thorough-breds, a conception which is repugnant to all the sentiments of modern society, they should endeavor to render all men and all women as thorough-bred as possible, and thus really secure their object on a grand scale.

But, as already said, the universal education of women can be defended on its own merits. The current theories of the uselessness of women except for breeding purposes are false and monstrous, relics of a worse than barbarian age. Any class of persons will be what society rates them.

Women, in so far as they are ciphers in civilization, are so because they have been so rated from time immemorial. The opponents of female emancipation are fond of pointing out that women have scarcely ever contributed any thing to the great currents which make up human civilization. The attempts of the friends of women to meet this argument have been confined to the enumeration of the deeds of exceptional women. This is justly declared to be no answer to the above argument. It has always seemed strange that nothing better than this could be produced. Admitting all the facts, the argument from the power of the conventional code is alone amply sufficient to account not only for the paucity and inferiority of all female productions outside of the sphere in which society has required woman to move, but also for the admitted fact that the brain is perceptibly smaller and the reasoning powers appreciably feebler in the female than in the male. All that women have accomplished, let it be distinctly noted, they have done *in violation of the conventional code*, which requires them to keep aloof from all active pursuits, and devote themselves solely to the pleasing of the male sex and the rearing of offspring. Yet who does not know the power, nay, the tyranny, of the conventional code? The real wonder is, that women have ever done the little that they have. Certainly men would not have done more under the same circumstances.

This, of course, accounts for the diminished brain on the simple principle of adaptation. Brain can only develop by use. It must languish from disuse. The causal faculty of woman has had no exercise, therefore it has not developed. The quasi-scientific sophistry which aims to prove that women are *naturally* inferior, and which would make ciphers and drudges of them because the lioness weighs less than the lion, and the bull is stronger than the cow, was exposed in a previous chapter (vol. i, pp. 657 *et seq.*), and equally strong if not weightier proofs from nature that the female is the really favorite and inherently superior sex, were adduced. Wide principles in biology are only found near the base of the great kingdoms of life, and too often have naturalists gone wholly astray in attempting to establish universal laws from the necessarily more or less accidental phenomena presented by the higher derivative forms. It was this error, or rather this ignorance of the beginnings of life, that misled the great Cuvier, who, as all know, made the vertebrates his specialty, while Lamarck devoted his life to the invertebrates and to plants. The generalizations of Cuvier are now rejected, and those of Lamarck are accepted.

The superiority of male mammals is a remarkable fact, but is due to causes which many naturalists fail to understand, and which are little creditable to the male character in general. Not one particle of it is attributable to their noble efforts in protecting and supporting the females or their own offspring. It can not in any sense be said to have been "intended" by Nature. Superiority itself has never constituted a *final cause*. There is no evidence that it has ever been pursued as an end from the point of view of "evolutionary teleology." This male superiority in the most derivative forms of life is simply a *secondary sexual character*. It has been acquired by fierce combats among the males for the possession of the females. It is this, and not the labor of brain and muscle in quest of food and shelter, that has given the stag, the stallion, the bull, and the lion their superior size, strength, and beauty.

Logically to carry out this specious reasoning, therefore, which demands that men shall imitate nature, and declares that whatever nature does is best, it will be necessary for men to adopt these animal ways, and again commence fighting among themselves for the possession of the women, which is what has given them their present superiority. In this way they may again hope to develop their physical powers and earn their title to supremacy.

The sphere prescribed by society for woman has necessarily rendered all her aims and pursuits radically different from those of men. The theory of life for women is that every woman of marriageable age is actually married to a man competent to protect and support her; that her sole duty is to bear children, keep her husband's house, and be ornamental according to his tastes; that all labor, whether of production, exchange, distribution, politics, or war, is done by men, and women found engaged in any of these pursuits are deemed violators of the social code, and their services and productions are discounted proportionally. Women are regarded as wholly incapable of taking care of themselves, and are dressed in a manner which renders any active occupation impossible. An unprotected woman found anywhere outside of her normal sphere is admitted to be the common property of the first man who may chance upon her. The sole object of existence for unmarried women is marriage; they therefore neglect every thing else and devote their entire attention to this end. They seek marriage with all the subtle arts with which men seek pecuniary gain. To fail is to lose all that life is for. A woman who has passed a certain age without attaining to this goal is despised, and reproached with an offensive epithet.

Barring all exceptions, and there exist many honorable ones, the above is a scarcely overdrawn picture of the present state of public opinion throughout the so-called civilized world with respect to women. Under such circumstances, will any one tell how they ought, by any fair construction, to be expected to do any thing for civilization? The fact that they have done any thing at all is sufficient to prove that they would do their full share if the barbarous conventional code respecting them could be abolished. The object of educating women is to render them capable of doing something besides laying snares for husbands before marriage and dressing to please them afterward. Their services are needed in greater fields. There is work for them to do. Teachers of the young they must be, whether mothers or not, and this universal function alone would be sufficient to make their thorough and universal education an imperative duty of society. While the female mind may, and doubtless does, differ from the male in many important and fortunate respects, it is only the emotional part of it. Intellect is one and the same every-where, and the proper nourishment of intellect is truth. Therefore what women require as education is the same that men require, viz., knowledge.

MATTER OF EDUCATION.

An exhaustive treatise on education would naturally consider its three aspects, the *matter*, the *means*, and the *methods* of education. It is, of course, not the aim of this chapter to constitute such a treatise, but merely to point out the position of education in a system of artificial civilization. Of the matter of education much has already been said, the preceding chapter having been devoted to its most general characteristics. A great amount of important detail remains, however, and can not be brought within the scope of this work. To say that a proper system of education should confer the maximum amount of the most important extant knowledge upon all the members of society, leaves the question still open as to what constitutes the most important extant knowledge, as well as the question how much the maximum amount is. No attempt at a detailed answer to these questions will be here made, for two reasons: first, because of the necessary condensation of these already swollen volumes; and, secondly, because the symmetry of the work does not require it. In fact, they must be, after all has been said that can be said, to a large extent experimental questions, to be solved gradually and tentatively. They must necessarily be questions for experience slowly and with increasing correctness to place beyond discussion. All that can at most be expected of us are such general suggestions as will be sufficient to form a working basis for this really untried experiment.

It has already been stated (*supra*, p. 492) that the two leading principles in the selection of the most important knowledge for all mankind to possess are, first, that of generality and, second, that of practicality. To what was said in the previous chapter respecting the first of these principles, a single word may perhaps be here profitably added. This is in the nature of a caution against the mistake of confounding the general with the abstract. This distinction has been so clearly pointed out by Herbert Spencer in his admirable little work on the "Classification of the Sciences" * that it will be sufficient to refer the reader to his exposition. He will observe, however, that among other radical distinctions between general and abstract truth there is one which Mr. Spencer has not pointed out because it did not concern him, but which is of vital moment in connection with education. This is that, while abstract truths are generally difficult to grasp by the mind, general truths are usually easily so grasped. The reason, of course, is that the process of mental abstraction is a far more difficult one than that of generalization. General truths deal with phenomena, and are in that sense concrete facts. As a rule, too, the details of the most important general truths, the several terms of the generalization, are familiar to all, so that the general truth needs only to be stated to be learned. The only question the teacher need ask, therefore, is, whether these terms are already known. If not, of course they must be first acquired. But from first to last it is dealing with the concrete. Nearly all the truths of science most necessary for men to know are of this character, and require no higher intellectual powers to grasp them than are daily employed in the ordinary affairs of life.

As regards practicality, the natural mistake to be avoided is that of confounding practical knowledge with technical knowledge. The education of information deals wholly with knowledge of things (objects, phenomena, laws), not with knowledge of ways of doing things, which is the subject of technological and artistic education. The practical in the former case means such knowledge as tends to enable

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its possessor to perform the duties of life, to contribute to human progress, and to be happy. As these ends are the supreme concern of society, we must look to the wisdom of society, gradually and tentatively, as above remarked, to secure them.

Prefacing, then, with the remark that all that may be said must be understood merely in the nature of suggestion, the following highly latitudinarian principles may now be provisionally stated:

There should be drawn up three distinct educational curriculums—the first to be strictly universal and invariable and to be restricted to such general and practical knowledge, within the certain comprehension of all intellects, as is clearly of the highest value to all without any distinction whatever. Of the body of truth embraced in this primary curriculum, let no human being within the authority of society under any circumstances remain ignorant. This curriculum, wisely drawn up, while it must necessarily embrace many simple but important truths which most men now know, would at the same time embrace a large amount of information of the highest value for all, which the bulk of mankind, under the existing *régime*, never acquire. There can be no doubt that such a curriculum could be so prepared that, were all education to stop there, mankind would really be wiser, in the proper sense of the word, than at present.

The second curriculum, while dealing in the main with truths of greater depth and difficultness, should also adhere to the principle of greatest generality and practicality. This curriculum should also, like the first, be universal in its application, but should differ from it in the one particular of embracing many interchangeable branches. Not that pupils should here be allowed any election in these branches, but society should possess the means of judging which ones are best adapted to the intellectual character of each. The method for securing this characteristic of the second curriculum will be explained presently.

The third curriculum should be adapted only for those who have successfully passed the first and second. This must be, to a large extent, elective by the student, who is supposed to have attained a sufficient age and judgment to decide, with the aid and advice of the teacher, which advanced studies will be best adapted to his life-pursuits. It should embrace truths of greater speciality and detail, as pointing to some one great class of practical labor or another, to be undertaken after the preparation shall have been completed which it should be the object of education to furnish.

These curriculums should be made up, not arbitrarily, but systematically and in pursuance of one general law, or ruling principle of classification. This principle should be something like the following:

Every thing that has been made known by man should be made known to all men. Not that every object, fact, and law of nature can be separately acquired, but that general laws embracing them all should be made known, through the knowledge of which these details are generally, though not specially, known. The primary curriculum should deal with the widest generalizations progressively diminishing in generality; the secondary simply continues the reduction of this generality, and leaves the teacher to judge at what point certain co-ordinate branches of the system are to be dropped and more attention paid to others, and which ones these shall be; the third curriculum still further continues these processes of specialization and election for special ends.

In all this it must not be inferred that abstractions are to be taught first. These must be taught, if at all, toward the close, after the most complete concrete perceptions to be abstracted have been formed. Nor must it be imagined that comprehensive truths are to be taught without an acquaintance with the terms which they generalize. In all cases the bulk of the tutory labor will be in furnishing the data for these wide inductions. It is only meant that the concrete truths instilled should be such, and only such, as constitute such data, and that the utmost care should be exercised in avoiding the introduction of such as only constitute data for special laws and inductions which can only be of value at later periods in the course.

All who desire to pursue branches of knowledge not embraced in the three curriculums should be furnished the means of doing so, and society should regard it as its duty and its interest to hold out to worthy persons every inducement to pursue special investigations, including those having the origination of additional knowledge as their object. But these should only extend to such as have already completed the three curriculums. No danger from inequality of intelligence could thus result, since it is not special and technical knowledge, but general and practical knowledge, that chiefly confers intelligence and power upon men. The higher special courses might thus be safely made optional, to be pursued by those having special inclination and sufficient leisure. For as there are degrees of interest and leisure, so there must be degrees of learning.

The extension of all knowledge to all men can take place, as just remarked, only through the classification of knowledge. Those having no leisure to continue beyond the three curriculums will have already received a course of instruction which embraces the whole field. Those who go on can only receive the same knowledge, but more specialized forms of it. These special branches simply constitute the *differentia* of the general truths already attained. This might be carried out to embrace original scientific research on the one hand, and strictly technical instruction on the other.

One of the most important objects of education, thus systematically conducted, should be to determine the natural characteristics of individual minds. The real work of human progress could be doubled with the same outlay of energy if every member of society could be assigned with certainty to the duty for whose performance he is best adapted. Many a shoe-maker was made for a legislator, and many a legislator for a laborer. Men who are born to be naturalists are made clergymen, and *vice versa.* Most men are out of place because there has been no systematic direction to the inherent intellectual energies, and the force of circumstances and time-honored custom have arbitrarily chalked out the field of labor for each.

The system of education here described affords a means of regulating this important condition on strictly natural principles. This constitutes the special object of the three curriculums, gradually descending from the more general to the more special. A school should be conducted on scientific principles. One of the characteristics of all scientific work is a record of observations. The phenomena to be observed and recorded in education are intellectual phenomena. The mental aptitudes of individuals, as every one knows, differ in all ways and degrees. It is only by observing and recording these that the true character of any particular mind can be determined and any safe conclusion drawn as to what mode of life will be most successful, from the point of view of the interest both of the individual and of society.

But by this process, systematically and regularly conducted, there can be no doubt that such a record would form a tolerably safe basis for such a conclusion. This, too, explains the necessity of leaving it entirely to the teacher to determine which branches of the second curriculum should be omitted and which pursued, the teacher being in turn absolutely confined to the data furnished by the record. It would be both easy and interesting to elaborate this important suggestion. We can, however, only add that, where the special bent of the mind had been humored throughout the second and third curriculums, the danger of any one departing from it afterward would be in great part removed.

MEANS OF EDUCATION.

By the *means* of education, as distinguished from its matter on the one hand and its method on the other, must be understood those auxiliaries through which knowledge is directly imparted to the mind. Thus far we have limited the use of the word *education* strictly to this furnishing the mind with knowledge, and, so far as this discussion is directly concerned, this is its entire scope. But in one sense education, as thus defined, is itself an end, and is to be attained through the adoption of appropriate means as well as carried out by appropriate methods.

This distinction has been wholly overlooked in all previous definitions, and those things which are here regarded as the means of education have not only been included in its matter, but have been made, in theory as well as in practice, to constitute its chief matter.

The several means of acquiring education constitute so many true *arts*, and, in so far as education is devoted to inculcating them, it is simply teaching art and not science. In the history of progress art has *appeared* to precede science, and, if by science systematic knowledge of all the facts and principles involved in the given art is understood, it certainly has preceded it. But this empirical progress is the true intermediate step between completely genetic and completely teleological progress, between the method of nature and the method of science, which, instead of being identical, as certain scientists suppose, are at the antipodes. And in general it may be safely affirmed that wherever art is made to any degree to precede science, that is, where progress is *tentative*, to that extent will it resemble genetic progress and involve waste and loss. That from the nature of things this must often occur is manifest, and it can only serve as a warning against the error of imagining that there is any superiority in this method, and against the tendency to employ it when it might have been avoided. That this tendency has been potent in education is as manifest as that the *a priori* method can not always be employed.

The chief means of education are the arts of reading, writing, and calculating. In learning these several arts the mind is not in any proper sense acquiring knowledge, although to most persons this information is ranked as knowledge. These, however, are really and solely the means through which knowledge is acquired, and it is a dim realization of this truth which leads the advocates of scientific education to contend so strenuously for the direct study of objects. There is much justice in this demand, and while reading, writing, and the calculus can not be dispensed with as potent agencies in acquiring knowledge, the constant aim should be to reduce the amount of attention given to them, and to increase the amount of work achieved through them; especially should all devotion to them as ends or parts of culture be discouraged, except for those who have shown by their completed educational record that nature has marked them out either for elocutionists, engrossing clerks, or computers of astronomical tables.

As true means of education, however, these and kindred arts must be duly recognized, and with them the necessity of devoting as much time to their acquirement as is necessary for their ready use in the work for which they are designed.

When we speak of education, therefore, and name its matter, it must be understood that in this is necessarily embraced the means of obtaining it.

METHOD OF EDUCATION.

The *method* of education is, still less than its means, within the scope of this work. Good methods of instruction as well as competent instructors are in the nature of the supply to a general and genuine demand for education. It may be safely asserted that thus far this supply has corresponded, both in quantity and quality, with the demand.

The methods and the teachers have always been as good as the popular notions of education, and they will doubtless continue to be so. Most works on education have been devoted chiefly to methods of conferring it, and have generally failed to indicate its true matter. It is this department, therefore, which exclusively claims our attention. To create a demand for real education, for the education of information and its diffusion, is a far more urgent duty than to lay down correct rules of carrying on such a system of education. Chronologically it precedes, just as every-where, notwithstanding the reverse order in which the terms are usually placed, demand must precede supply, *i. e.*, desire must precede satisfaction. This much we concede to the otherwise erroneous belief that education must be treated on mercantile principles. This is because to this extent it is really a business affair, and properly so. Strangely enough, however, it is just this part of education that a disposition has been shown to treat as outside of the laws of economics. The manner in which teachers are paid and the general attitude of society toward them clearly indicate that they are looked upon, to a certain extent, in the light of philanthropists who should expect to fulfill their mission without much substantial aid from without, and as a mere "labor of love." Strangely enough, too, the salaries of teachers are absolutely lower than those of most of the common classes of artisans.

Before entirely dismissing the subject of method, it may be proper to remark that the education for which we contend is an artificial education; that whatever *special* methods may be adopted it must at least be prosecuted on one *general* method, viz., the teleological method. In this the education of knowledge and its distribution differ radically from the education of experience. Again, it becomes necessary to combat the views of those scientists who, having probed deep enough to perceive how nature works, think they have therein found the key to the way man should work, thus ignoring the great distinguishing characteristic of intellectual labor. Having found the claims of those who believe that nature is a product of design and outside contrivance to be unsound, they conclude that there is no design or contrivance, and, having seen that results in the organic world are produced through rhythmic differentiations, they infer that results in the super-organic world should be left to the same influences. Nothing could be more false or more pernicious. Scientists of this school, from the weight which their opinions must have, are really doing more to counteract the true tendencies of social progress than those who openly oppose them. All social progress is artificial. It is the consequence of teleological foresight, design, and intellectual labor, which are processes diametrically opposed in principle to the processes of nature. If in learning the law of evolution we must apply it to society, it would have been better to have remained ignorant of that law. In passing from the policy of inaction due to the belief that Providence is alone able to act, to the policy of inaction due to the belief that Nature is alone able to act, we have gained nothing. As well worship the old god as the new one. But, rightly interpreted, science teaches no such thing. It teaches the universal dependence of all phenomena upon antecedents, and it is this law that forms the basis of all successful action in transforming rude nature into useful shapes and guiding wild forces into advantageous channels.

That this correction is as applicable to education as to other things is proved by the hostility shown to intrusting it to the care of society itself which it chiefly benefits. It is also proved by many of the so-called *natural* methods which are recommended by this class of nature-worshipers. The idea that children in this enlightened age must go back to the ages of barbarism and grope along as their ancestors were compelled to do for crumbs of knowledge; that they must be allowed to get all kinds of errors into their minds along with a few truths, because this was the method by which the primitive man first acquired ideas; that education must consist in a rhythmic ebb and flow of sense and nonsense, in order that the evils which the nonsense naturally entails may serve as warnings and make sense preferred; in short, the notion of making the life of every individual, so far as the acquisition of knowledge is concerned, an epitome of the experience of the human race—this entire scheme for converting education into a sort of social *ontogenesis* is false in principle, is not supported by any proper interpretation of the teachings of science, and is directly opposed to those furnished by every progressive step in the civilization of the race.

Nothing is calculated more forcibly to impress upon us the conviction that the mass of mankind must get their knowledge through instruction and not through experience, nor yet through personal observation and research, than to note how such great minds as those of Copernicus, Kepler, Galileo, Bacon, and Newton groped about in darkness and doubt respecting the questions of planetary revolution, tides, gravitation, light, etc., with which every school-boy is now familiar. Who shall say that these are not important and useful truths of the highest generality and practicality, yet in order to acquire them and render them true knowledge it does not require a long sham experience of stumbling about from one idea to another before the truth is at length grudgingly vouchsafed? For any ordinary intellect, acquainted with the phenomena they present, it is sufficient to be informed according to what laws the phenomena occur. This is but the work of a moment, or of a few lessons at most, and the result is practically the same. It must not be forgotten that a system of education, to be worthy the name, must be framed for the great proletariat. Most systems of education seem designed exclusively for the sons of wealthy gentry, who are supposed to have nothing else to do in life but seek the highest culture in the most approved and fashionable ways. But the great mass, too, need educating. They need the real, solid meat of education in the most concentrated form assimilable. They have strong mental stomachs, and little time. They can not afford to take slow, winding paths; they must move directly through. Culture they can get along without. Failures are dead losses. For them every step should count.

From what has already been said on the confusion of the true ends of education with the means of attaining them, it may be safely inferred that we regard the exclusive study of books, where the objects of which they treat are at hand, as both superfluous and wasteful of time. Yet let any one consider what proportion of the true matter of education is thus capable of being directly utilized by the mass of juvenile humanity. But in their absence other methods must be employed. The world can not afford to go ignorant, simply because specimens for illustration are unattainable. How many naturalists have ever seen an amphioxus or an axolotl? Yet how do those who have not know any thing about them? They have simply read and heard about them, and seen graphic representations of them. They would doubtless feel better satisfied to see and dissect them, yet can they be said to be ignorant of them? For all practical purposes their knowledge is sufficient even for naturalists. Their knowledge would indeed be limited if they could know nothing except what they could see, possess, dissect, and figure. Yet how much more is this applicable to the great heterogeneous swarms of non-specialists that make up the total of humanity!

The modern warfare upon books is simply a natural reaction against the prevailing neglect of easily attainable objects for the illustration of truth. Those scientific investigators who profess to hold them in such contempt give the lie to their professions by continually making more. If they do not realize how much they themselves owe to the literature of their own specialties, they at least confess by their own contributions to it that they expect others to profit by it in consulting their works. In this way they plainly negative their pretensions to discard books, and their professed disbelief in their practical value to science.

It is also quite remarkable that the same class of scientists who justly ridicule the claim of the advocates of the ancient classics that it is necessary to study them in the original in order to extract their full meaning and beauty, and who compare this method to that of taking the old stage-coach in preference to the steam-car, denounce the easy, second-hand method of getting information through books—those translations of Nature's great but difficult classic—and demand that each individual shall struggle laboriously through this original text in order, as they uniformly insist, to extract its full meaning and to appreciate its beauties. There is a gross inconsistency in this kind of practicality. A busy, short-lived race demands the consistent application of practical economics to the entire educational system.

Conclusion.

The doctrine that education is an active factor in Dynamic Sociology is simply a corollary from the doctrine of evolution in general, which rests upon the power of the environment to mold the organism. For what is education but a quality of the environment? To deny its influence on society is to deny the influence of the environment upon the organism. In enforcing education we are dealing with minors, over all whose acts there must always be exercised more or less constraint. They are simply required to be in certain places at certain times, and to perform certain acts which are foreseen to be destined to benefit them and society in after years. Obedience to these requirements, no matter how unwillingly, can not fail to produce the result foreseen. The intellect and the faculties of the mind are affected by the external influences artificially supplied for the purpose, and the individual can not by any act of consciousness prevent them from being so affected. Adults are themselves subject to this purely mechanical law of education, and children are far more plastic and impressible than adults. No one can say that he would have been the same as he is had his education been different, or wanting entirely. No one can help becoming acquainted with truths that are thrust upon him and made to appeal to his faculties. Of course, open and conscious resistance to impressions, especially in adults, would tend somewhat to diminish their force and clearness. But this can never practically occur in education. Usually there is no resistance, and often the educational influences are agreeable. It should be the aim to render them still more so.

The problem of education is, therefore, reduced to this: whether the members of society shall continue to pass through life surrounded only by the natural and unorganized influences which every-where exist, by which they are indeed constantly acquiring knowledge, such as it is, and many conceptions which are not knowledge because they consist of erroneous inferences; whether they shall thus be left to form all kinds of undigested and unsystematized ideas, half of which are objectively unreal, and most of the remainder too narrow to be of any value, yet to which their conduct will rigidly correspond, producing its legitimate effect upon themselves and upon society; or, whether they shall be required to pass a portion of their early lives under a system of artificial circumstances, so regulated that the bulk of the influences which appeal to the senses and produce ideas will be both reliable and important, and from which, under no other than the normal operations of the mind, reliable and valuable knowledge must necessarily result, solid character be formed, and the highest ethical and dynamic actions be induced, exerting rigidly corresponding effects upon themselves and upon society. It is, in short, the question whether the social system shall always be left to nature, always be genetic and spontaneous, and be allowed to drift listlessly on, intrusted to the by no means always progressive influences which have developed it and brought it to its present condition, or whether it shall be regarded as a proper subject of art, treated as other natural products have been treated by human intelligence, and made as much superior to nature, in this only proper sense of the word, as other artificial productions are superior to natural ones.

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